Infrastructure Planning and Management

Sustainable Development and Socio-Economic Analysis Part-1

Okay so welcome to class, so last few classes we have been talking about how we essentially importance of stakeholder and how we manage them right and the reason stakeholder are so important because we have also seen from our case studies that you know environmental group, citizens, opposition parties all of these kinds of organization can put pressure on infrastructure project and that might influence the outcome of projects not to mention contractors, supplier, etcetera, right so maybe one way of swimming it up rather concisely is there are a number of interest of projects and to the extent that we can align those interests then the project is likely to be more successful.

So if the contractor incentive the developer's incentives the NGO's the people are using it everyone's interests are aligned it is likely that you are going to have a favorable outcome versus otherwise right and so a lot of what we have been talking about the last few classes negotiation design thinking you know these social network analysis etcetera are all meant for us to try to align the views of various stakeholders but focusing quite a bit at what we might call stakeholders at the fringes.

So we talked about design thinking we were talking about user when we talked about negotiation you are talking about NGO special interest group all of that you know clearly the main stakeholders on a project or it could be the government the sponsor the developer and it is unclear and we have not really talked very much about what do we do if anything to modify the views of these stakeholders do we say that the government has a view or the private developer has the view now has a view and now we need to figure out ways in which they can convince other people right in which case we are sort of assuming that the private developer and the government have a view that does not need to be chained right and all they need to do is develop better tolls and technologies to understand and convince their stakeholder or do.

We also take the view that the river should also work right we should also have provisions where key stakeholders like governments like finance here is like project sponsor's alter their views around the project in order to better fit with everyone outside, so I hope you get the distinction earlier we are taking more about how do I as a central player on the project influence user and NGO's etcetera right, without necessarily asking the question how do I get influenced in turn right, so how do I get banks and government and sponsor to change the way in which they think about projects to ensure that they are actually designing project that are or selecting project that are much more likely to meet with everyone's expectation.

So today we are going to talk a little bit about frameworks and tools that should be used internally within these large organization not things that you use in order to convince you know I user special interest group, so we are going to talk about two thing we are going to talked about this called the equator principles right and then we will also talk about you know framework for essentially assessing impact rooted in an area called industrial ecology right, so we will do the sequentially we will first talked about the equator principles and we will discuss them a little bit and then we will talk about you know the industrial ecology based paper okay, so which group two now, so who is going to present the equator principle.

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So equator principle is a risk management framework adopted by financial institution for determining the accessing and management and managing the environmental and social risk in the project finance, so like if you compare small summary the big what is the equator principle about equator principle that is deeper reading is the equator principle financial institution equator principle management structure and the ten equator principles and from the social environmental sustainability marketing rating company value equator principle and social and environmental rating framework from project appraisal scheme already project review and the risk categorization and project social and environmental risk and action plan and social environmental program.

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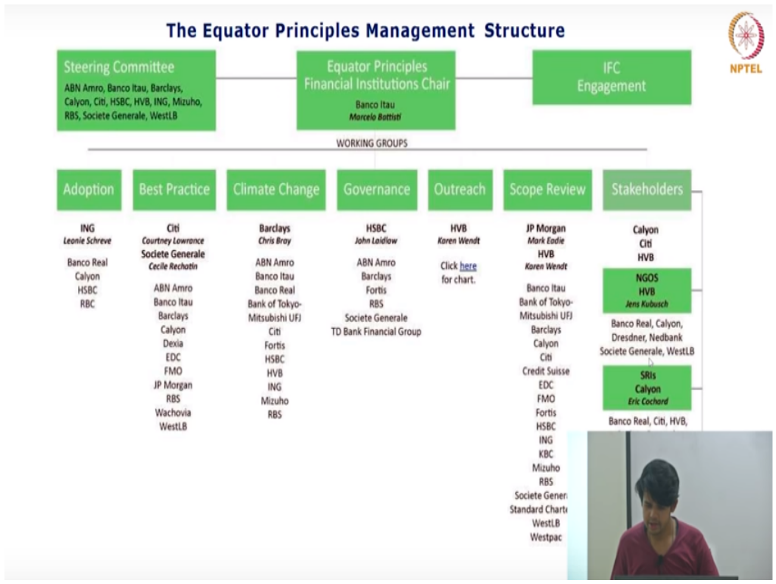

So this is the equator principle management structure on the top there is a steering committee and equated a principle financial instruction chair and the IFC engagement there are who accompanies ABM , AMRO, BANCO ITAU etcetera and there is two companies in the equator principle financial institution BANCO ITAU and MARCO position and that there is working like talk in the book some there is a few working groups is that in the adoption there is a ING BANCO REAL and CALYON HSBC RBC the best practice that is the cities COUNRTNEY LAWRANCE and the associate general and the cell CECILE RECHATIN all those things and there climate there is a fugitive in the climate change and the governance outrage and the scope review in the stakeholder there are few major companies is the NGO's HVB JENS KUBUSCH and SRI's, CALYON, ERIC and the client and there our client is there cities and the SHAWN MILLER.

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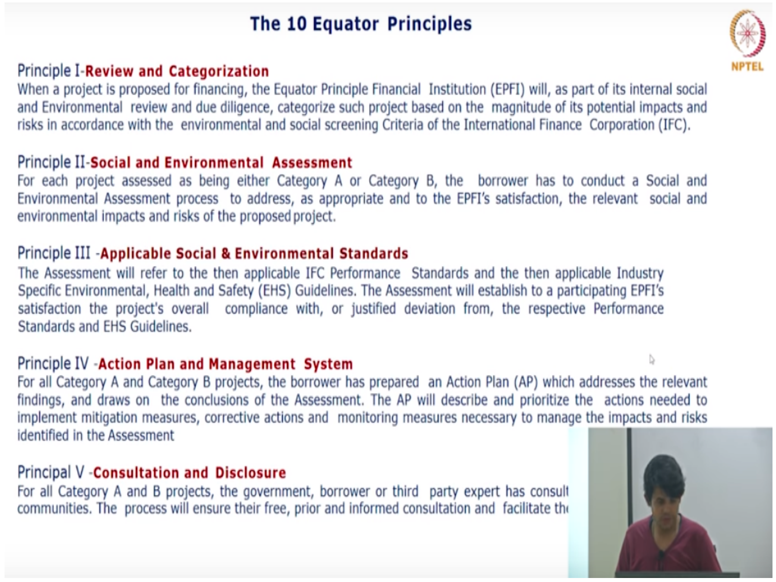

Let us gain equator principle, principle one review and the categorization, so when I project is proposed for a financing the equator of principle financial institution will as part of the internal social and environmental review and diligence categorize such project based on the magnitude of it is potential impact and the risks in accordance with the environmental and social training criteria of the internal finance corporation principle to social and environmental assessment for the each project assist has been there category A and category B there are on the board has conduct a social and environmental process to address as appropriate and the EPFI that equator principle financial institution that is satisfaction that delay relevant social and environmental impact the risk of the proposed project.

When she was three there is a applicable social and environmental standard the assessment will be referred to the then applicable IFC performance standard and then applicable industry specific environmental faith is the safety guideline the assessment will be established through participating and EPFI people satisfaction the project overall complaint with or justified deviation from the respective performance standard and EHS guideline principle for the action plan and the management system for all category A and category B project the borrower and has prepared an action plan.

Which addresses the relevant finding and draw the conclusions of the assessment and the AP will describe the prioritize and the actions needed to implement mitigation measure and corporate direction and monitoring measure necessary to manage the impact and the risk identified in the assessment practice principle 5 the consultation and the discloser for all category for A and B project the government borrower or the third party experts has consulted the project affected community and the process will ensure that there free prayer and the inform consultation and the facility and their informed participation.

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In principle six there is a grievance mechanism for all category A and B project to ensure that the consultation and the disclosure and community engagement continues throughout construction and the operation of the project borrower will be scaled to the risk and adverse impact of the project establish a grievance mechanism as part of the management system they will allow the borrower to receive the physician related the resolution of the concern about the project social and environmental performance is by individual or groups from the among project and affected communities principles.

Even the independent review for the project with the issue that may pose the significant adverse impact risk client should consider the retaining the external expert to the conduct of all the part of the assessment and these expert should have the relevant and recognized experience In the similar project and operate identically from these responsible for the design and constructions they should be in the engaged early in the project development phase and as necessary in the various stage of project design and construction and the commission.

Since eight covenants important strength of the principle with the incorporation of the convent linked to the complaint for a category A and category B the project borrower will convent in financing and documentation one to comply with all relevant host country social and environmental laws and regulation there are two to comply with the AP during the construction and operation of the project.

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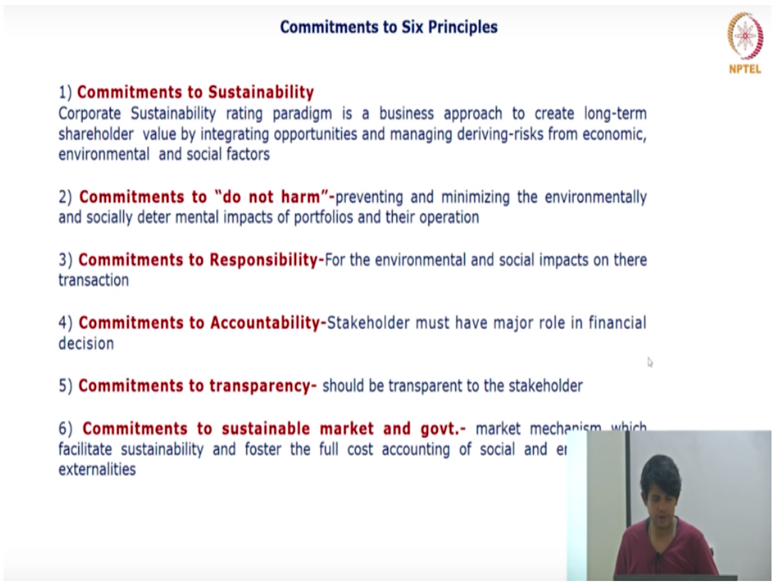

And there are commitments of the six principles commitments of the sustainability corporates sustainability rating by a diagram with business approach to the create a long term shareholder value by integrating the opportunity and managing the deriving these it is and home economic and environmental and social factors.

Commitments to do not harm preventing and minimizing the environmentally and socially determine mental of the portfolio and their operation.

Commitment's to the responsibility for the environment and social impacts on their transection.

Commitments to accountability stakeholder must have major role in financial decision abutment to the transparency should be transparent to this stakeholder.

And commitment to the sustainable market and government market mechanism which is facilitate to sustainability and foster the full cost accounting of social and environmental externalities.

So this is some idea of what are the equator principle but I am not sure that were very clear idea so we will get into that but what I also want to talk about is why are they here and what impact to they have, so first of all again and if you ever had a definition in his first slide but what are the equator principle someone like quickly, so the neighbor are not asked you on the street I have heard about equator principle what are they, so essentially look these are some principles that I am asked to follow in order to minimize environmental and social damage all right that is fundamentally.

what these are now because I do that I might have a greater chance of getting money from bank and in the process of doing that I might have risk mitigation all of that but fundamentally this is almost like a code of conduct right, so it is a framework it is set of principles right and the point of having these equator principles is it say this is a standard I want all of you guys to follow the standard because if you follow the standard then you are likely to minimize harm to society and the environment, so it stems from the fundamental premise that many infrastructure project have economic value right they create job they produce energy which can be sold they allow for transportation of goods which has the value and all of that.

So there is economic value that being created but in the process there is social and environmental harm that is often done because I have to clear away natural and environment I have to resettle people all of these things sort of happen and generally the resumption is that we tend to not pay enough attention to the social harm as we do to this economic growth, so economic growth trumps environmental and social consideration and therefore if I have a high IRR or an NPV I go ahead with these project and that is primarily because why in the past why do we go ahead with high NPV projects what the rational why do not we sort of say no this is a high NPV but high environmentally sensitive or socially sensitive project.

let us not go ahead with it why do not make that argument what is do you think is the fundamental difficulty, so it become as not proper framework to measure when you say measure this measure one or the environmental and social harm that you are creating is very clear the value I am getting I can measure that in rupees term or dollar terms or whatever I find it very difficult to measure the harm that I am causing right and often if I find it difficult that I do not measure it so essentially say okay qualitatively there is some harm that I am causing qualitatively there are benefits that I am getting.

So I am going to go ahead with it right and qualitatively in order to you know mitigate the harm that harm I am causing will qualitatively do something in response like preparing an environmental management plan, so yes I am destroying something, so I will create something but I do not know what the balance is, so very often we have two problems, problem one is it is very difficult to quantify what harm because the very subjective and we will get into that second is the financial benefits are often near term the environmental consequences are often longer term.

So for instance if I deforest a large area and somebody complaints to and says oh you know what you are going to help increase global warming because the capacity of sequestering carbon dioxide has come down because you have taken away trees okay and we look at it and we say but the time 2035 of 2040 comes along this is actually going to be a critical issue and let us say I even put a value to it at 2035 or 2040 even if I put a value to it if I discount it in a discounted cash flow manner to 2018 then whatever value that I would have put in 2040 will be discounted by so much that it might be trivial today compare to the near term call the benefits and costs that I will be playing around with right and so generally what has happened is we have tended to make decision more economically.

So let us loot at cost let us look at the economic benefits and decide on projects all right and clearly we realize through many case studies we have looked at that, that may not necessarily be fair because you know just because you happen to live close to a river which is being damned you know should you give up your entire life and be resettles, so there is an ethical equation there is also the question of project success because as we have seen these people can band together form larger coalitions you know etcetera.

So we need to have some set of principles or ideas that allows us to consider the economic environmental and social consequences all this is the premise, now the question is fine that is all logical it is easy to say I need some principles, so the question is what should those principle be and how do I you know get those principles to be accepted, so you know in India you have the Bureau of Indian Standards the Bureau of Indian Standards comes up with codes once I have a IAS code you know IAS four five six for concrete we do not debate about it we use it of course we might over a period of time change this codes because new technology has come in etcetera.

But there is a legitimate authority the Bureau of Indian Standards that has some up with code for everything from what the Indian flag should look like to what you know concrete the way in which concrete should be poured and you know the specifications around that, so do we actually get governments to come up with frameworks which also have social environmental consideration with them what do we do, so in this question so maybe I will get somewhere, so in terms of this particular arguments how is how do you sort of go about this so in the particular case of the equator principles what happened but even otherwise how do you go about creating principles.

So first thing is put things into numbers and we will come to that right because that is going to be a big part of today's discussion but let us say you figure that part out so let us say you come up with principles, how do you ensure that people adopt these things so the argument here in the equator principles case is look at the end of the day project are financed is really determined whether projects are going to take off or not, so governments might decide that they want this kind of a project but ultimately there is not finance behind it right that these project will not take off right.

So the key players in infrastructure projects are the finances and so the question is can I influence the finance right is essentially one argument yeah you want to cut here anything more to add to that.

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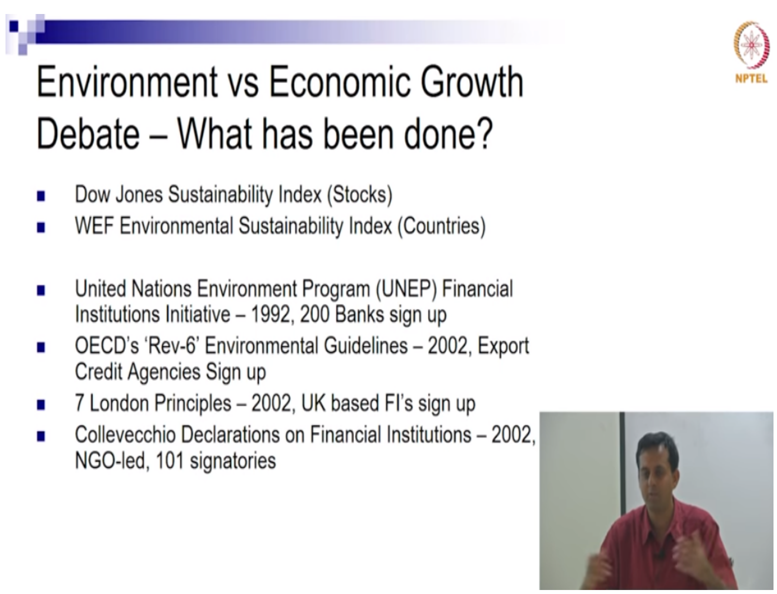

So in this case there are a number of parallel things that have been happening so there is this environment versus economic growth debate right what been done, so many things happened, so there are stock markets like the Dow Jones or Stock indices right or the market indices that came up with a sustainability index the world economic forum also came up with a environmental sustainability in takes across countries essentially what these indices try to do is a process that sometimes people called well in some cases people call naming and shaming but this this is a bit of the opposite okay this is a bit of the opposite where you are actually trying to highlight people who have done well.

So the world economic forums environmental sustainability index highlights countries that have sustainable practices and perhaps saying okay public perception might push people to invest in this countries right and all of this again took place has been taking place of the last two three decade more or less since we had that famous world convention on dams in 1992 where we had this thing called the Brundtland in a report right in the Brundtland definition of sustainability anyone remember the Brundtland definition of sustainability in the world commission of dams in 1992 is guy called Brundtland would define sustainability right and he defined sustainability as the ability to develop without impinging upon the right of future generation it is sustainable development is development where whatever you do today does not reduce the choices available for future generation right.

So in other words if I burn a renewable resource then that is not available to future generations because it takes you know millions for years in order for you know coal to be formed for instance, so the moment I release the energy from coal I am actually depriving future generations of doing that and therefore that is not necessarily sustainable but by the same token if I harness wind energy today it is not like there is less wind energy form you know people next year right because these wind cycle are more or less is going to comes on an annual basis, so that was the logic so underneath that logic there were lots of these effort to say we need to be more sustainable right and more of these effort came up let us start identifying companies that are sustainable countries that are sustainable etcetera.

So ninety nine so united nations environment program, so they got financial institution to sign up to this all of these in the UK right, so the K took a little bit of a lead 2002 with something that they call the London principles and they got a lot of financial institutions because again there is a recognition that financial institution really help push project forward and the financial institution were asked to sign up to these principles and essentially saying you will lend only to project that have right some of these kinds of characteristic and if you guys agree to that and you only lend to those kinds of project then only those kinds of project will take off and if those are sustainable principle then we will have a bunch of sustainable project but then sort of the all of these are localized right okay.

So this is for London okay or the UK fine right but the same thing is not happening in the middle-east or in china or in Africa etcetera but in 2000 think there was something called the COLLEVECCHIO declarations right and essentially this was NGO late, so the NGO's took the lead and said look we will draft those principles right what are they will they are maybe there we will sort of quantify them we will qualify them whatever but we will come up with a list of principles right and these will be principles that we feel are really important.

And so anyone who develops a project must are there to these kind of principles and those principles could be things like completely avoid resettlement or you will fund project only when there is no resettlement or if there is resettlement then the terms of resetteling should be right some things that favorable to the project community right or whatever, so you can have whatever you want in there, so you can have you can say I want an environmental management plan that goes into these kind of detail these are this idea and principles but the COLLEVECCHIO declarations were promoted by NGO's.

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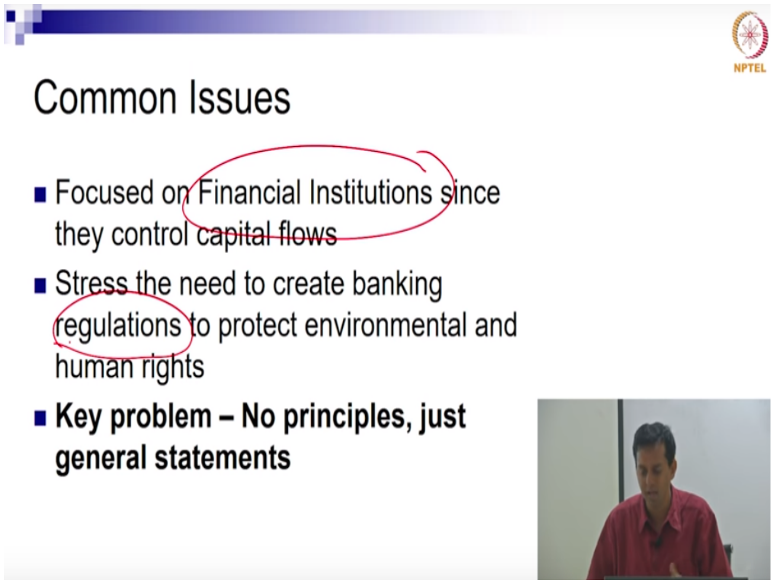

And so we you can see that between 1992 and 2002 this been a lost of thinking about this because a lot of project are failing the stakeholder view point is coming up we sort of understand that look the debates on climate change are starting to happen we are talking more about sustainable development we are worried about at that point of time the fact that we are over reliant on coal as a source of energy and those reserves will be depleted at a certain point of time.

So lot of these initiative are happening, so when we look at what's common they all focus on financial institution, so this is common okay because everyone say's look these are the guys if we can catch them right you know then we really can solve the problem there is no point catching government because they will be here today gone tomorrow somebody else will be in that place there is no point catching a private developer because if this developer says no someone else will come in their place but if you can catch the bans right the source that is important right and so essentially they say look we need regulation right to protect environmental and human rights.

So these are great the problem is these are all general statements someone says okay what are the principles you want me to follow and if you say not harm okay that is fine I mean I would like to not do harm but you have got to be a bit more prescriptive got to tell me you know what does that mean you other by looking at land am I looking at labor am I looking at housing resettlement you know flooding you know what are the thing that you want me to take care of when I do my project okay and so these are so essentially what is happening is a lot of people are coming out with ideas saying okay you guys must commit you must have sort of an honor code hey I will not harm the environment without necessarily telling us how to do this.

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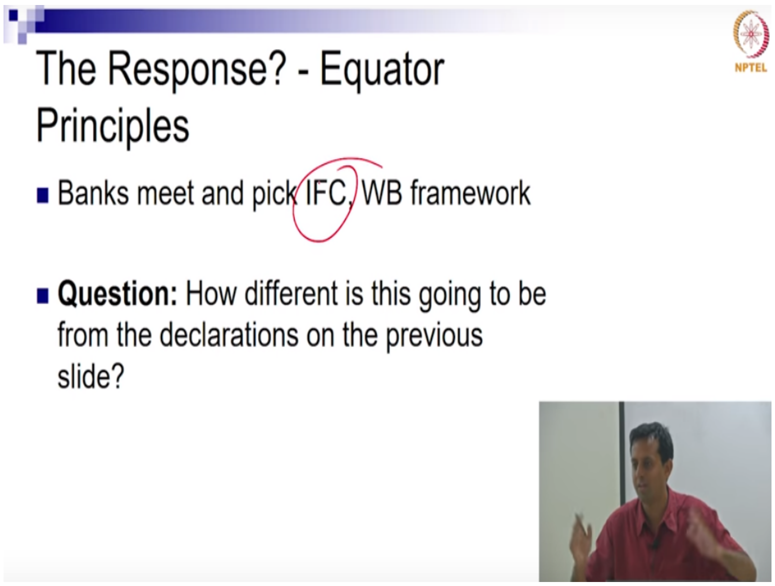

So in response to the is where the IFC which is the World banks private landing up so the world bank has an arm called the IBRD which essentially lends to governments and public institution, so the IFC lands to private institutions engaged in development right, so the banks sort of meet and you know they come up with this framework called the equator principle which is champion by the IFC then these are essentially expected to be much more you know clear principle which is what should have presented and I will show you some of them in a minute question of course is how is this going to be everyone ask the question is this yet another grants statements right banks will be environmentally conscious or do you actually have principles.

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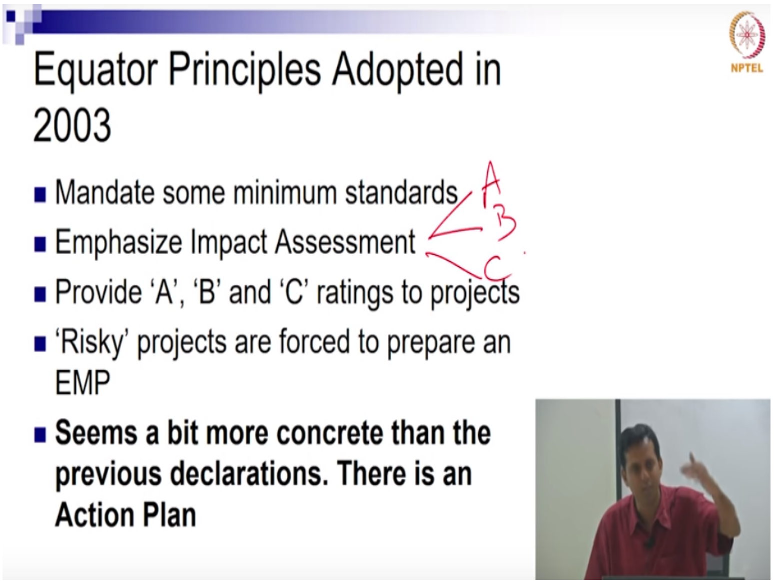

So the equator principles are a little bit more detail right so they have some method in them, so first of all they say whenever a bank so it is a charter that everyone signs on you can choose to sign on to this you can choose not to sign on to this but if you sign on to it you say I will do these thing, so it is like a code of practice, so if it says one of the things it says is first you will do an environmental impact assessment and you will now at the end of the empire impact assessment you will decide whether a project is category A B or C, that is step one before you lend to a project you will do this assessment C is low risk B is medium risk and A is extremely high risk.

So you provide this ABC rating to project now depending on the risk you do certain things, so if you are a project in a category right then you have got a ensure that an certain kind of environmental management plan is prepared before you even get to the lending table so now at least have some actions that I am asking banks to take I am not just saying please lend only to project that are environmentally beneficial right which is sort of vague because it becomes that we interpret what is environmentally beneficial or not and there is absolutely no way that you can do something with absolutely no impact on the environment.

So the common joke that I cracked with a lot of people is you and I are sitting here breathing in oxygen and breathing out CO2 right, so we are all contributing to global warming right, so maybe we should all stop breathing altogether, so obviously that is not possible so there is not possible so there is no sort of activity that you can do that can have completely zero impact so what you are sort of saying is so you are saying, let us not get into it is qualitative level let us sort of say do this analysis categorize A B C, A category does this B category does that then you provide loans.

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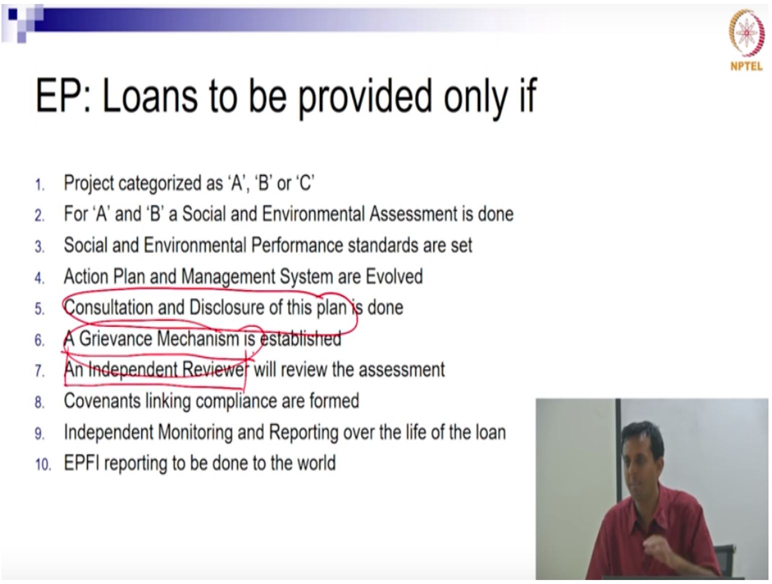

So you categorize ABC, A and B you do a much more detail assessment you set performance standard you have some kind of an action management plan of course these have to customize for project for certain projects displays people certain projects this destroy animal habitats but you have to have an action management plan for these have to come in before you will lend, so remember so this is not something which the project organization is doing to appease the local NGO's this is something that the bank is requiring to be done even before they give money, so you are taking things that are normally done later bringing them up front right we also have to your so and again this is one the issues with some of the cases we looked at right there seem to be a lot of discussions but the discussions are not really disclosed you do not have understanding about project parameter.

So they must be clear disclosure norms you have go to established a grievance mechanisms so that if somebody complains that you did not do what you said do what do they do about it you need independent reviews and this is key this is very important right I can just say I can come up with a plan and I say the plan is being met right and how do you actually justify you need a third party to verify whether the assessment is actually being done there is independent monitoring there is all kinds of reporting that you will do over the lifecycle of the loan , remember the loan is not given in one shot right if I need five thousand crores I do not cut you a check for five thousand crores it comes over a period of time, tied to certain project milestones.

Which means at any point of time right I can turn off the plug and this that there has to be this sort of reporting that you do on the project which is public, so the idea is if you want we want banks to do as we want banks to sign up this and we want banks to save every project that comes to me I will follow this procedure I will determine the level of risk depending on the level of risk I will formulate a plan I will set up independent assessment I will set up this reporting mechanism it will be transparent anyone can go complain and allow but we are figuring our how I deal with these complaints, so I am going to be much more environmentally responsible right is essentially what the equator principles talk about.

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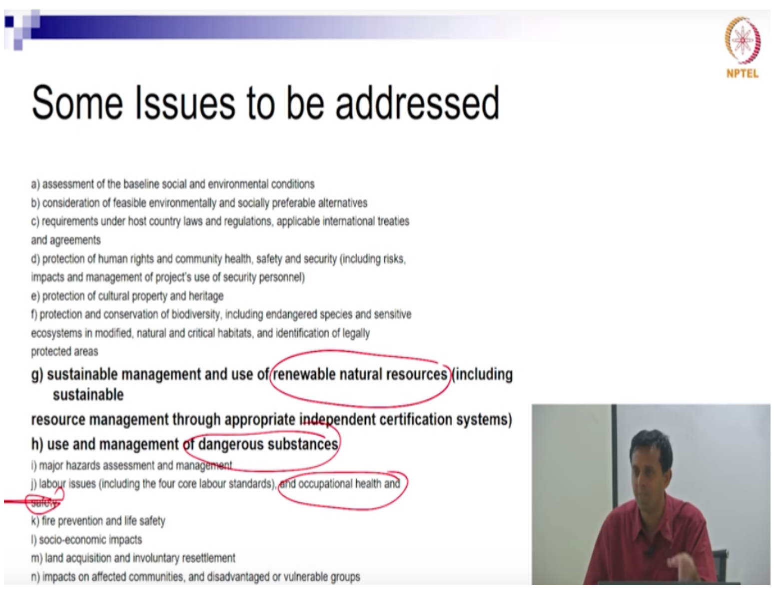

And so these are various issue that they want to address is highlighted a few right sustainable management and use of renewable natural resources, so that should be a part of you plan user management of dangerous substances or whatever labor issues right occupational health and safety these are important, so you are actually going to construct something what are the safety precaution you are providing what is the quality of life of people who are employing on the project it is easy to say I am creating jobs, but what kinds of jobs you creating are you essentially running a concentration camp or are you actually creating environment where people can actually develops skills and you know make reasonable incomes etcetera it is a lot of these kinds of things that you are asked to address as part of this plant.

So the point is the banks now have to take a more responsibility no longer is it just saying show me the internal rate of return show me the net present value I will give you money it is ensuring that the project developers do all of this, so the bank has to put in more effort right in order to fund the idea being that if they put in all of this effort it is more likely that you will have a project that is much more sustainable because the developers before they start anything we will have to come up with these plans address all of these issues etcetera right.

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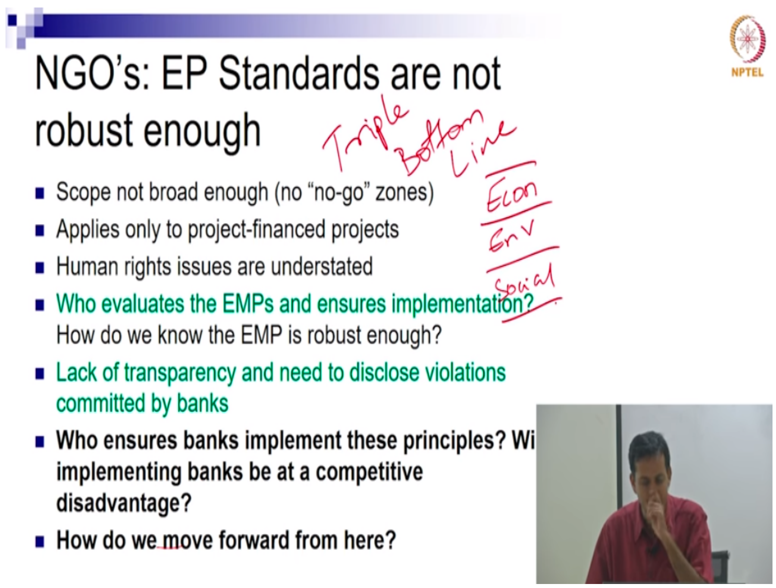

So that is the theory behind the equator principle in other word it says let us not just go and convince NGO's etcetera let us get key participants like banks to actually do something about it okay the NGO's of course have a response because they came up remember with the COLLEVECCHIO declarations right so they came up with their declaration side by side IFC has come up with the equator principle, so the NGO say no-no our is better right first of all it comes from the NGO's, so it is our voice okay the scope of what you guys have said is not broad enough we want at some point so the way the equator principle are written you have got ABC but a can still is high risk but that still means that you can mitigate the risk and proceed.

What the NGO's are talking about is saying at certain points you have got to say these project cannot be funded you have to have not go zones you have got to say the environmental cost of these project is, so high that I will you know absolutely not fund these projects and there so there are no go zone is one of the things they talked about applies only to so these are private banks, so if I do PPP if I go in for private finance sure but what if it is and because the IFC involved but what it is lending directly to government, so this principles apply then and maybe they do not while you have done a lot of environmental thinking what about people and that seems to be understated you talked about natural resources there is that etcetera.

And how do we know that this environment you have I should create an environment parent plan but how I know that it is a good plan how do I know it is a robust plan you want somebody to monitor the plan but are there frameworks for creating that plan should it be in a certain level of detail should certain thins be addressed not clear and there is a lot of transparency, so if there is a if there are violations committed by banks tight is there a way to disclose those, so you signed on to this charter but I know there are two projects where you funded project which you should not have fund.

So is there going to be that kind of a mechanism because otherwise I will fund three project sustainably and I will put them all over my newsletter and my branding material etcetera but to make sure I do not reduce the revenue stream I might be funding other projects as well. So these are all kinds of objections you know that people have and this part six question who ensure that banks will implements these principle and will implementing banks create a competitive disadvantages right so I am a developer the project I go to you know Citibank or ABM AMRO or whoever is signed up for this for the lord and they tell me to do a bunch of things right but sitting right next to them is XYZ banks.

Which says oh you do not have to do any of this you have a good IRR you have got a good project proposal here take the money, so as a developer will I there for not go to bank XYZ because they are asking me fewer question and if I continue to do that Citibank and ABN MARO and whoever is signing up to this will run out of business, which means at some point they will say boss I need to survive down with these equator principle and in fact that is something that sometimes you now people sort of argue might already be happening.

So for instance there is this new bank that came up called the AIIB the Asia infrastructure investment back which is essentially backed by China right but it is another, so it is another multilateral development the Asian development bank this is the AIIB primarily focused on infrastructure when AIIB came up the World bank was up in a fit saying look the problem with the AIIB is they will give you money at probably easier at lower interest rates but they will not have the same safeguard that we have.

So if you take a World Bank project the land acquisition process the settlement process there are norms you have got to acquire land in this manner these are the values that you need to look at right you cannot look at some transaction and you cannot under pay people it takes a long time to follow those regulations to put land together for the project it is there for because of reasons like this they want to make sure that people are not short changed, so if I take a World Bank loan I have got to go through all of this if I take an AIIB loan if I do not have to do all of this then the temptation is that people might rush towards people like the places like the AIIB which may not necessarily be good for sustainable development.

So this concern that partic was voicing is a very real concern which is being seen in debates even today, so later stages it will be resulted a bad project right, so in other words there might be socials etcetera–etcetera right but at that point it is too late it is too expensive a lesson to learn for me to say sure but the interest rates I am asking might be low enough that I might still get my money back I might also be lending strategically I might not necessarily be learning for an interest rate and also you have got to understand that you know there are political cycle, so yes trouble might happen five seven ten years down the line but I may no longer be in office at that moment.

So right now to get the project going and sort of up my political profile in my constituency I might go in for these project so this is a very important issue that we have to sort of look at and so then the question then becomes how do we move forward from here right so what do you guys think how do we how effective are things like the equator principles, so on the one hand there are some guiding principles rather than saying jus develop somebody has come up with some framework and you are telling banks at least go through this checklist before lending.

So the you are at least taking some minimum precautions whereas people are saying but this is just minimum you want somebody to run an environmental assessment etcetera they will do whatever it is and they will continue in their own merry way humming the environment so again in some countries particularly in Europe you have principles but you do not see everywhere then there is something for instance in India you have something called an environmental impact assessment, so you need to get environmental clearances there is that etcetera.

So there are always but the worry is that because people who are giving those clearances have a fundamental interest in the project they very often do not really go into a tough scrutiny or essentially say look give me a environmental impact assessment and by the way an environmental impact assessment is only as assessment I am going to tell you how good or bad things are and you say fine you have given me the assess I grant you clearance, so the worry is that yes countries do have some of these but are those frameworks robust enough should not you have somebody else come in and play the role of policemen and that is the criticism.

So the criticism is tis framework is no more robust because banks also have an interest in lending and making revenue, so that has been the criticism of the equator principles in term of is it really enforceable will banks really sign up will it really be enforceable if the economy goes down and you are not able to find this kind of project will you not be tempted to lend elsewhere and therefore will you not sort of modified these people but the other lobby is something is better than nothing, let us at least go through this process over a period of time, now maybe we do not solve the problem completely right but we get there but that sort of leads us into the next set of discussion.

So that says so Tillman says there are two thing you can do either threaten people with sanction and that again is something that we are trying to do since we are trying to form a club and say okay this like the cool club and if you are essentially not going to follow our principles the you are not going to be part of this cool club, so maybe the United states would not support you if you are not really the banks in your country are not signing on to this declaration, so you try to strong arm them the other is the opposite.

So try to figure out a way so to try to figure out a way for people to organically adopt this right involves perhaps going all the way to the end and saying look today decision are made purely based on excel spread sheet on a financial plan if I have a good internal rate of return on return my project or a project return then I am likely to want to invest in it of governments and private developers and financials would want to invest in it, so going back to the original point can I take all of these environmental social benefits and somehow put them into the balance sheet.

So right now I am dealing with two things I am leaning with an economic valuation and then I am dealing with all this social environmental impacts and like I said these are qualitative I have got plan and all of that but what if I took these social impacts and put them on the balance sheet and I am able to show that by this is no longer a 17 percent return project this is a two percent return project because they are all these other negative costs that are out there, so this was often this was at some point people call this the triple bottom line .

So the idea is you have your so you have you're the economic cause and the one bottom line then you add on your environmental costs and profits that is the second bottom line and then you add your social cost and profits so you now have your accounting statement or your project cash flow statement or your project NPV analysis, considers all of these things the three the famous sustainability triangle no economy equity and the environment economy environment and social equity, so all of them are considered in the balance sheet .

So this is an approach to say let us quantify everything let us put it in and the it is obvious the banks will themselves safe look this is only a two percent return I am not going to invest in it this is a 19 percent return I am going to invest in it there is negative return you are etcetera question is how do I do it I am destroying a certain ecosystem I am building a dam that is leading to flooding certain marine life are not going to be able to live there anymore I am destroying that habitat what is the cost I am resettling people yes I am providing them a house etcetera but I am taking away cultural heritage I might be taking away livelihood these guys used to fish in the water now I move them further England and they are not as good as farming.

So there is a cost to that, so or I build you know a highway in which more vehicles actually start moving and that leads to increase air pollution maybe, how do I quantify all of those is an important mission this is where this sort of area called industrial ecology starts helping us think about this, so let us move on to who is presenting the second ready, so the point is you can do it any way you want you can have a central review authority you can have a regional review authority you can have a sectoral review authority the point is it then again becomes a qualitative judgment

Essentially you are doing a qualitative judgment saying so and so said this is category a project so and so I said they are going to do so many things are going to plant thousand sapling they are going to create one ANGANWADI they are going to you know create a school for orphaned children does it balance and the answer is very difficult to tell certainly it is good that I am forcing them to build the ANGANWADI, I am forcing them to plant these sapling better than nothing but does it really balance and whether it is regional or sectoral you cannot really get that unless you are able to quantify the two and say this was the damage this is the benefit of building the ANGANWADI and the orphanage and whatever what not are the cost matter so to see how we do that let us.