Sustainable River Basin Management

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Module - 3- 2

Lecture - 25

Part 5

Welcome everybody to sustainable river basin management; module 3- 2, part 5, last part.

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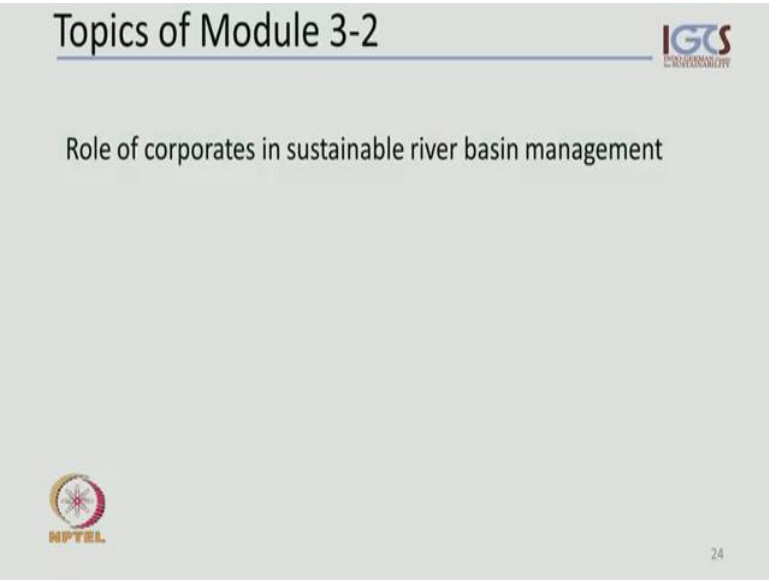

Today I want to talk to you about the role of corporate in sustainable river basin management.

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Now, what are corporates in sustainable river basin management at all? We are talking about global enterprises and which may lay above sustainable river basin management, because they have a social corporate responsibility. They may even have in-house departments which deal with sustainability and various aspects. We also mean industry associations which for instance, in the case of German technical and scientific association for gas and water. We also mean by this, the smallholder associations which making together several farmers or several small scale businesses. We also mean industries or companies adhering to certain environmental standards which may also undergo accreditation processes, which influence how water has been used. Some of those you may have heard about already; just examples, fair trading is one; organic farming certifications.

There are several globally, but also nationally, countries have different schemes for those. The ecotourism certification of how we manage as water is one of the indicators here. The forest stewardship council or there is another extractive industries transparency initiative, which brings together mining industries to monitor themselves; those we mean.

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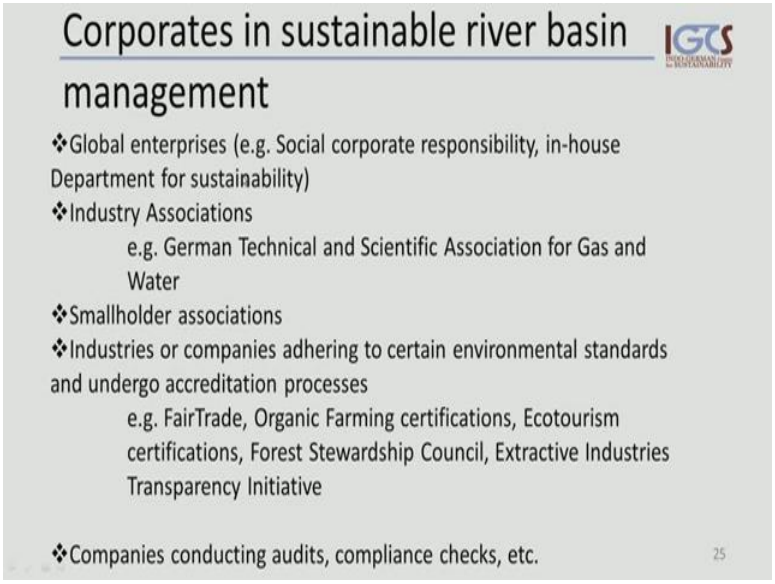

We mean also companies which conduct audits or compliance checks in this context of these accreditation processes or in-house self compliance checks within companies

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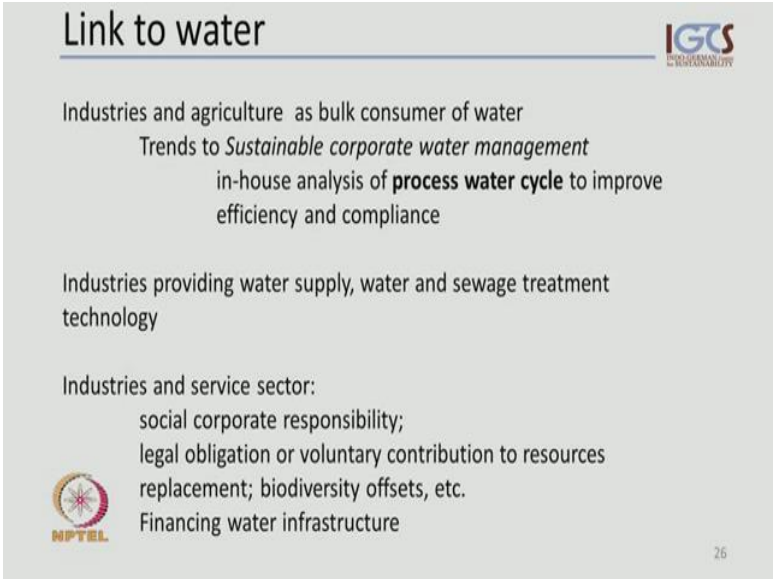

Now, how does it link to water? Well industries and agriculture are bulk water consumers; that is how it is and moreover, as a trend to sustainable corporate water management which you can observe. This means that there is an in-house analysis taking place after process water cycle, which means that water being needed for to produce a certain products or certain service industry, and this analysis in the first place, is being done to either improve efficiency, to produce the amount of water that required, because even its bulk consumers pass

something to get the water and then, may be water scarcity and water may not be available or the water quality may be so that, water has to be processed to be usable in the production cycle.

So, this is an entire process change and change that we are not discussing in this river basin management course, but it is part of this sustainable corporate water management practices. Obviously, such companies also do this not just for economic reasons, but also for compliance reasons, if there are legal conditions in place for something like this. So, and then you have industries which provide water. There may be in water supplier; there may be in distribution; there may be in water and sewage treatment technologies specifically. Then we have industries and service sectors, which may have social corporate responsibility, inbuilt into their industries or services. There may also be legal obligations or even a voluntary contribution to resources replacement. Some of those companies may be planting trees; more often you hear about this or they may have to do or do biodiversity offsets and so on, and these industries and service also appear in the financing of water infrastructure. Those are the major links of these corporate to the water.

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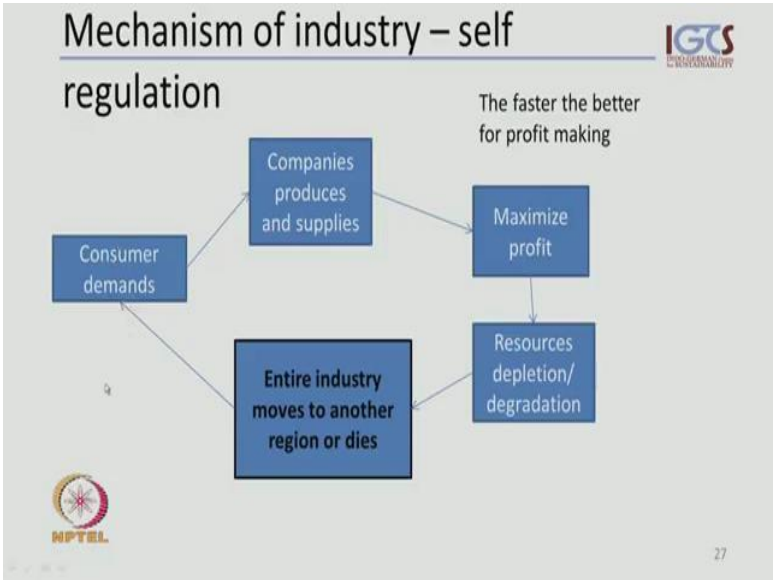

Now, there are some mechanisms in the industry, which are self regulating and I just want to briefly touch upon this, and there we find ourselves in this again. So, what we usually have is that, there is a consumer demand for a certain product or certain service and a company responds to this by producing and supplying these demanded goods or service. This is being done in a way that maximizes profit. So, the chain is to produce that and obtain a maximum profit, and this usually, results in a resource depletion and degradation as we observe it. This

may go on for a while in a very successful way. The consumer may be satisfied and the companies may make their maximum profit, but eventually, this will breakdown and force the entire industry, not just one company to move to another region where the resources are available or that entire industry may eventually, die out like it has happened for some of the plantations; orange plantations, banana plantations, or even the fishery industry in some areas. So, in this, the faster this whole circle rotates, the better it is and larger the profit will be and we assume that we will have a happier consumer on this side.

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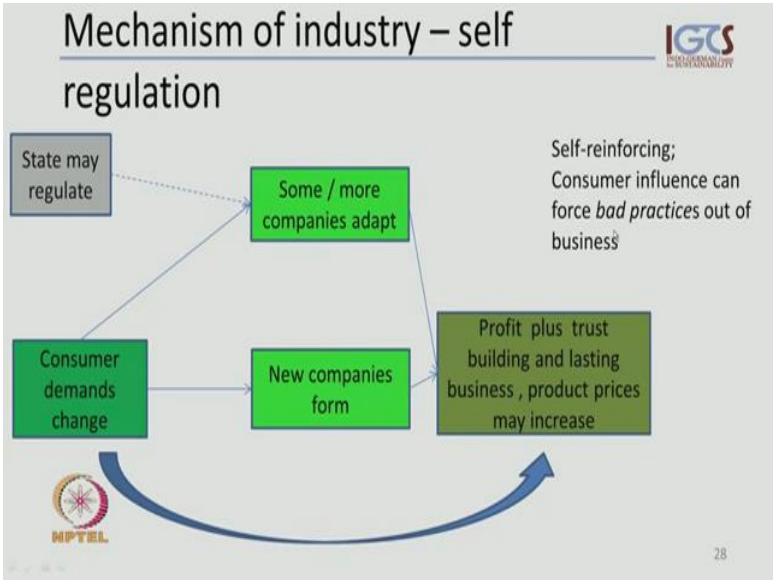

Now, this can also be completed different and this is what we see increasingly, happening in terms of lifestyle change, which come also linked to knowledge, linked to education, and that awareness of processes of our planetary boundaries. So, in this case we would tell that you have a consumer that has changed the way, he or she takes decisions and demand a product. They not only demand a product, but they also would demand some background information to the product; what is in it? Where was it produced? How under which conditions have those people work in these industries, being paid or what are the working conditions in such industries, which could provide those goods and services? These are the questions which come or driven by the consumers, and which force some of the companies to adapt and change the way, they interact with the consumer and the way they interact with their source areas.

So, some may adapt and this will draw more and more companies into this adaptation process taking place, and it brings a new relationship to laid at which, acts to the lower the pure profit making, trust building exercise, lasting business support and this also changes product prices

usually, raise in the price which consumer in the service that I have seen in many cases, accept that rise in price and the information affect back to the consumers actually, in this in line with the lifestyle principles, where consumer once you perform. Then we see companies being replaced also. New companies form and which are, may be more adequate to respond to this new relationship here. Now, this was sort of reinforcing again. Companies will be pushed out or bad practices will be pushed out of this business and more and more companies have to change, but in some of the cases, this will not step in out of itself, because companies always have another opportunity to move to another continent or another country, where may be the demands in this information, and this trust building, is not as developed. Then such cases, the state, they have to improve regulation, environmental regulation and environmental enforcement or peace regulation, and to build in to draw and force such bad practices into a new direction.

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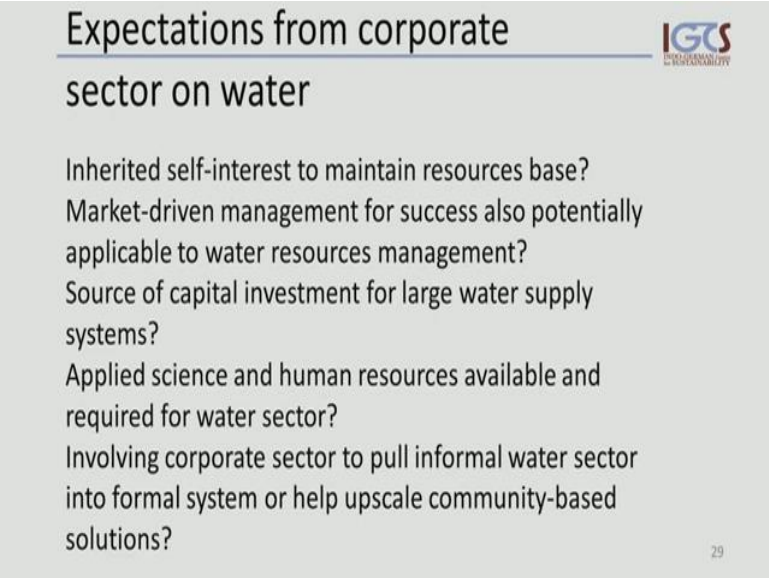

Now, this is quite important of to see or know it what each of us as an individual can do and you will be working in some industries in some point or you already working in some industries. Again you can see where exactly, is your company in this picture and what has been going on now, is going on in this. Now, what do we expect from these corporate sectors in water and why do we actually take this up here? Now, well there should be inherited self interest to maintain a resource base or should not it. There should also be a market driven management for success, that is potentially, applicable to water resource management. That is what we would have think. Also that, these companies source of capital investment for large water supply systems. So, we will look into these, look towards these corporates, to see if

they can actually, jump start some of these large capital investments for water supply systems. We would also seen this applied science close to what people need, the understanding of what works and what does not and the human resources are available in these corporate companies, which could feed into the water sector and improving the water sector. We also very often see in developing scenarios that the ideas to involve the corporate sector to pull, for instance, the informal sector, for instance, the informal water sector into a formalized system and help upscale, small scale, may be also community based solutions. Those are expectations and the question is how in a way; what is the response; what actually is happening?

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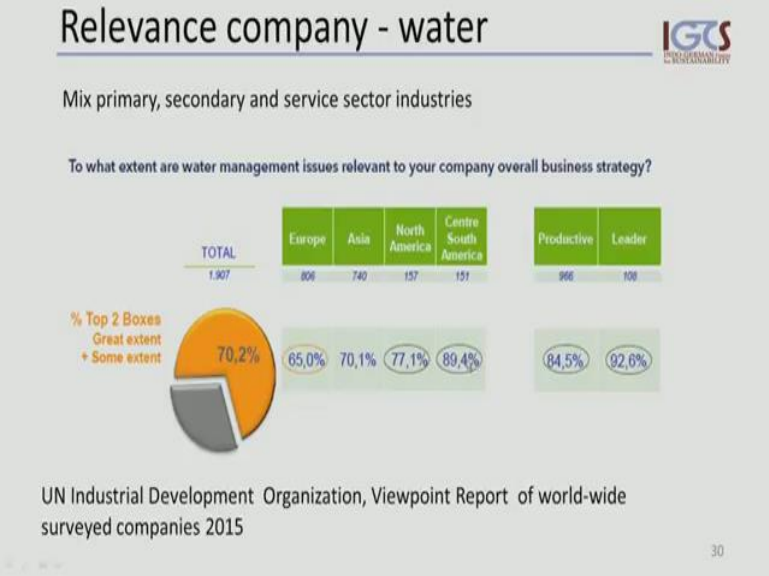

Well, the relevance between companies and water; that was investigated in a study very recently, and that survey was conducted by the UN industrial development organization, a division of the UN, with simply, a survey and there was a viewpoint report, produced and published in 2015, very recent. They surveyed a mix of primary, secondary and service sector industries and ask a number of questions and I am just showing you a few, which give us an idea of how these previous questionnaire, were raised. It can be important to our context and may be partially, be answered. One of the questions was to what extent our water management issues, relevant to your company over business strategy; that companies which have a business strategy and how does water management play into this or does it play into it at all? Then we have a division here, between different continents, from where those interviewed companies came from and then, we have a subdivision here, between the leaders

are the responsible of these businesses, these companies and the more technical or more productive personnel from these companies.

What you generally can see that a majority of these, whatever companies, remember mixed, primary, secondary service; not all are really within primary using water, using like beverages or water using industries; some of them are also in service sectors or it is different from water as a primary resource, going into the production process and still 70 percent of those companies see this as a relevant water management as a very relevant point. There is a huge difference of however, between the European based companies and for instance, the companies based in on the other continents, especially, central south America, where these awareness seems to be much higher. Now, which can has to do with the climatic conditions, but not only.

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Now, a lot of following questions to that was how as a company undertaking water management initiatives in the last five years. What was questioned especially, was what are the reasons that let your company to undertake these water management actions. There are some numbers listed here of the responses, and we have, because one is a positive response by about 44 percent; less than half of all those have undertaken water management initiatives in the last five years and out of those, 44 percent; they have given reasons for doing it and very important here, is not what it appears to the largest which is compliance is lower, and regulations which shows the importance of state regulation, strong influence of government, but also it shows here, how important the consumer behavior is in this feedback loop, that I introduce to you for the reputation, the safeguarding of assets, the performance, the need to

disclose, to be accountable for water performance, the pressure from the consumer themselves and from the stakeholders has become one very important reason.

So, summing all this up, this portion has much more importance to why those companies have actually, changed, conducted any of the water management initiatives. You see last differences between continents here. Again, here the Latin American continent has been playing a large role in set of the average here, in terms of safeguarding assets, but we also see that the consumer and stakeholder importance is very high in Asia for instance. The disclosure of the information on the water performance being very high, comparatively, high in Europe. So, this shows some differences taking place between the continents, but the overall average here, is very much putting a sort of final breakthrough, the consumer behavior in the first place and compliance with laws and regulation as just a frame, that can facilitate and may be, accelerate some of these to take place

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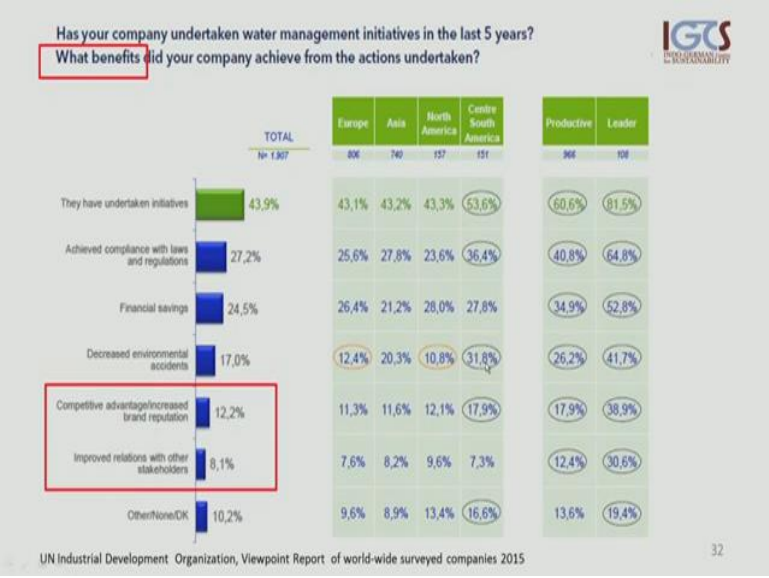

Now, let us look into the question, the follow up question, which was looking into the benefits, which the company achieves from the actions in water management and again, it is very much related to the consumer behavior, which just improve the reputation and they improve the relationships with the stakeholders. So, it is driven on how, what is demanded from the consumer end and not from the industry, coming out of the industry itself. Again, the fail is important. They just followed the law, 27 percent, but equally important that consumer, the stakeholder driven request, that influences the decision here. Now, I can just see the differences between the various continents here. We can see that environmental incidents, accidents are fairly important and they are the major reasons of industry in water

management initiatives, because these accidents were reduced by the highly large number, for instance, the Asian continent and Latin America, Latin American companies.

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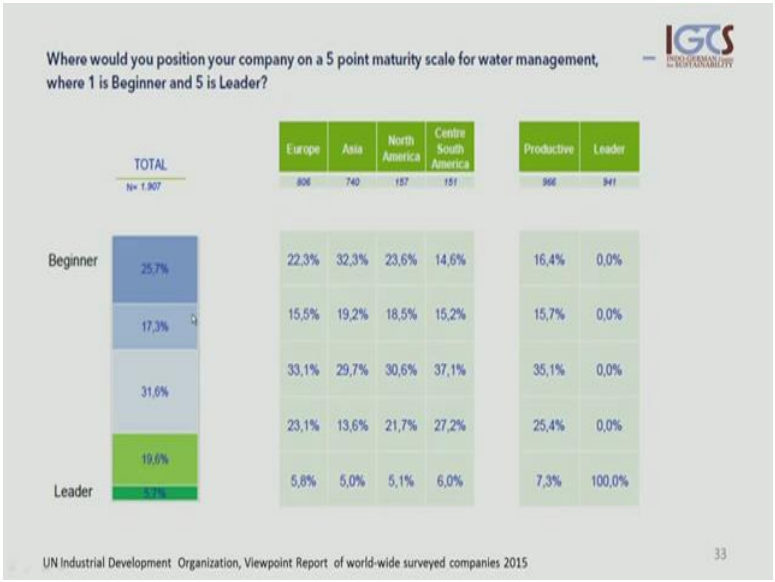

So, this is very interesting to see and yet, another aspect to this is how those companies rated themselves in terms of being matured for water management; how knowledgeable are they about water management, which I, may have the option to rate and search as a beginning and up to a leader in this field of water management. This is an interesting year to see that very many of them rated themselves as beginner or being so close to a beginner, 26 percent here, and 17 percent, is really close to beginner or just getting into it, which shows that we cannot really expect very much right now, from the corporate sector in general unless it has been driven much more by the consumers and the stakeholders or shareholders in those companies.

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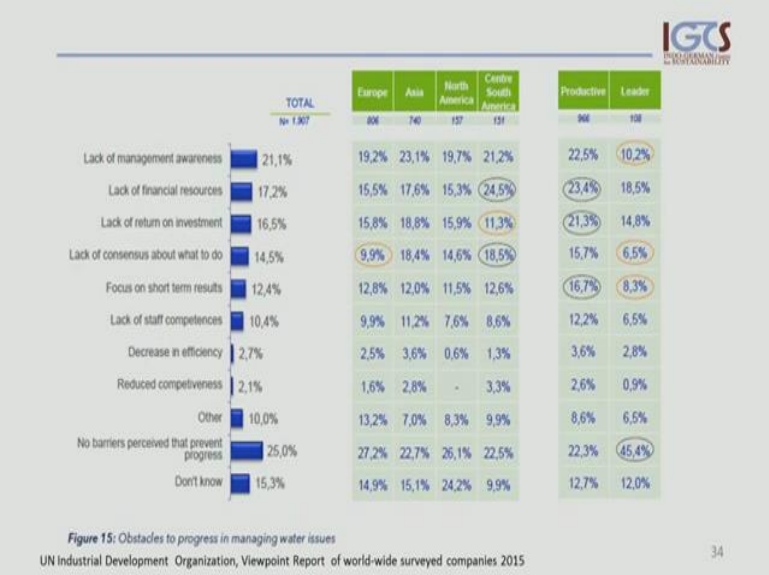

Another question that was investigated was to look into, what are the obstacles in those companies to improve on water management issues and as we have seen, from how they rate their own knowledge base in water management, you would also not expect so much from, the question is then, what actually makes them being such limited or at such an immature state, right now although, water is being discussed all over for decades of years as a primarily, very important resource in not just industries; for life. Now, what we see here is that there are huge differences between how the productive or those the technical staff is assessing the obstacles, and how the leaders or the responsible staff is assessing those obstacles. Interesting here is that the CEOs or the leaders or heads of these companies, close to 50 percent actually, say what does now various actually, we can do it any time; we could start now if this is something we have to do or which it becomes the priority; whereas, the technical staff does not readily decide, but they rather, see the lack of financial resources as important or the lack of return received from a more economic point; what actually keeps our business up and running? What maintains our jobs?

The importance also is that many of them see this, the business orientation way and looking at short term results; not having a long term strategy in place, and that is why, not putting so much emphasis into the water resource management.

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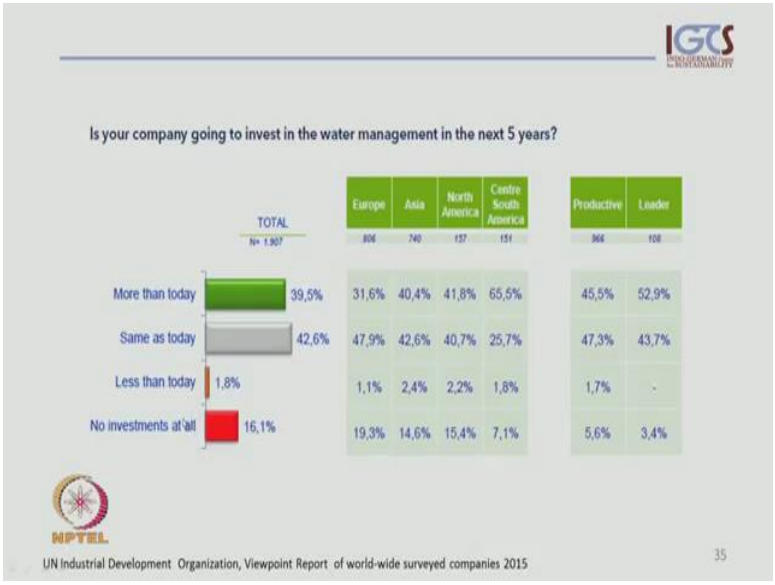

So, this is very interesting to see how different levels of influences in such companies rated. Then we have a question on; is your company going to invest in the water management in a next five years? What we can see is that as a large clock here, on as we will invest more into it or we may just continue the way, we have been doing it? But there is also a large, fairly large percentage that actually, says that they would not invest into this at all, into water management. This is quite high in some of the regions like in Asia or also, North America which actually, facing a water scarcity or water pollution as major impacts on businesses. Business has to close down in Asian countries, because of the water pollution so, which is part of the water management, but yet, those companies do not see this as one of the priorities here. On the other hand, you have very higher initiatives, interest in investing into the water management, when compared to the other continents above 50 percent in the Latin American companies.

So, this is also interesting to see way out, we as consumers can influence this, but also as water managers in the future, and also how government regulation could change this figure here, towards more initiative coming from the corporate sector, towards sustainable water management.

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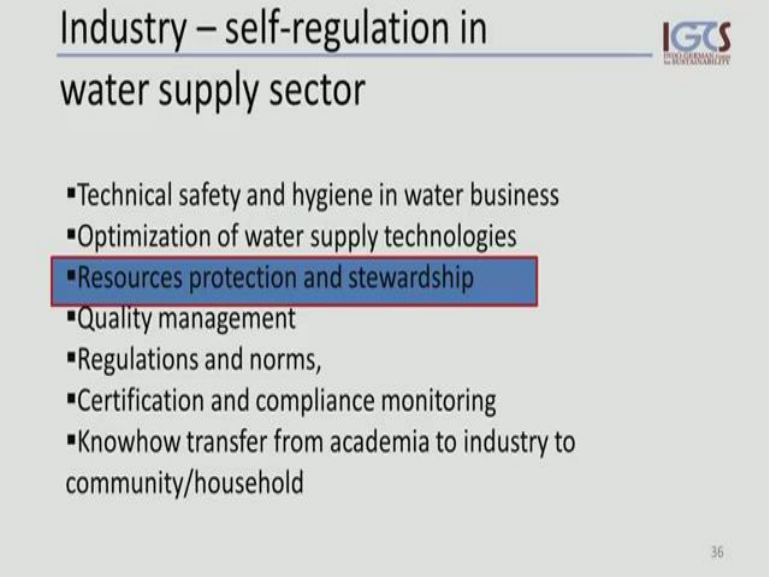

Now, let us look briefly into the water supply sector, because this is the sector, an industry that is dealing with water every day. I have to find the water; I have to make sure that adequate amounts of water are available, and that the water is saved and has good quality. So, it has knowledge in this. This is the primary, the prime business of these industries. So, the idea was that technical safety and hygiene in water business; they also deal with the optimization of the water supply technology. They also deal with the resources protection and stewardship with water quality management and quality management in the entire process. They also contribute to regulations and norms. They also conduct, imparts themselves, but all they have developed certifications and compliance monitoring, and they play a major role in knowhow transfer from the academia to industries, and to community and households. So, in those we can see the influence of these industries directly. Now, what I want to take up now, a little bit closer, is the resources protection and stewardship

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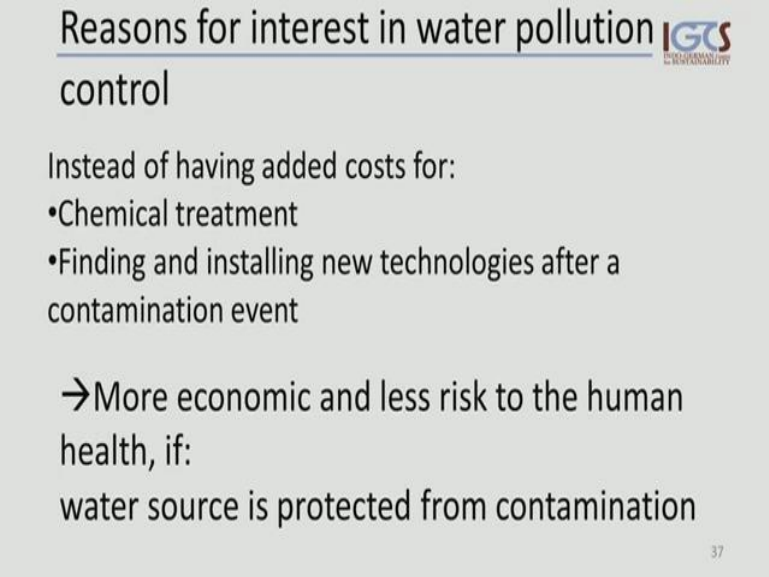

Well, why is that an interest, reason and all volunteers in water pollution control from these industries if they want to maximize water provision to an end-user, who pays for the amount of water that has been delivered? Now, there are additional cost too; having to treat water. So, if we have to add chemical treatment, several levels of chemical treatment; that is an additional cost. There must be new technologies developed and installed, as investments necessary for the installation of such technologies, when contamination is taking place or when pollution, one single event has impacted the water quality of the source of water that has been accepted. So, there is an interest in removing or reducing those cost. So, it is for such suppliers, more economic and less of the risk to human health if the water source is protected from contamination in the first place. So, this is a pure economic reason, which along (refer Time: 27:30) taking us also through sustainable management objectives.

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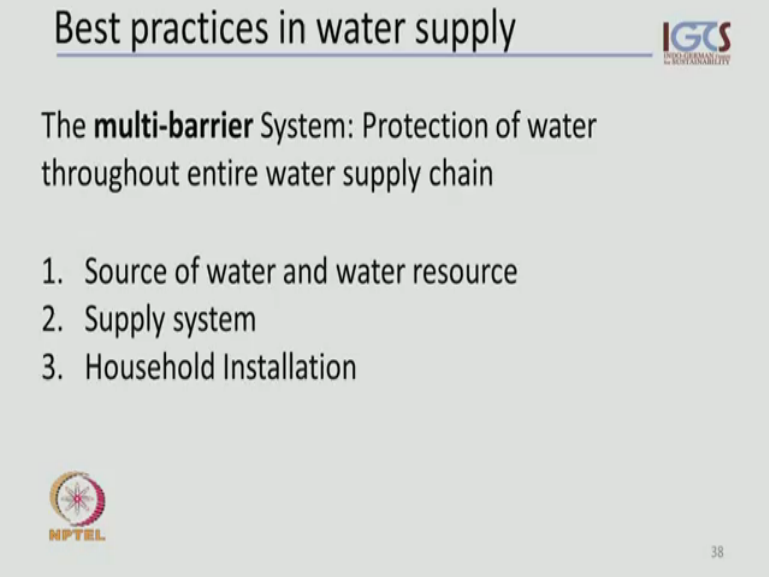

Now, let us look into the best practices in water supply, and the best has been implemented right now is, a so called multi barrier system, which takes protection of water, throughout the entire water supply chains.

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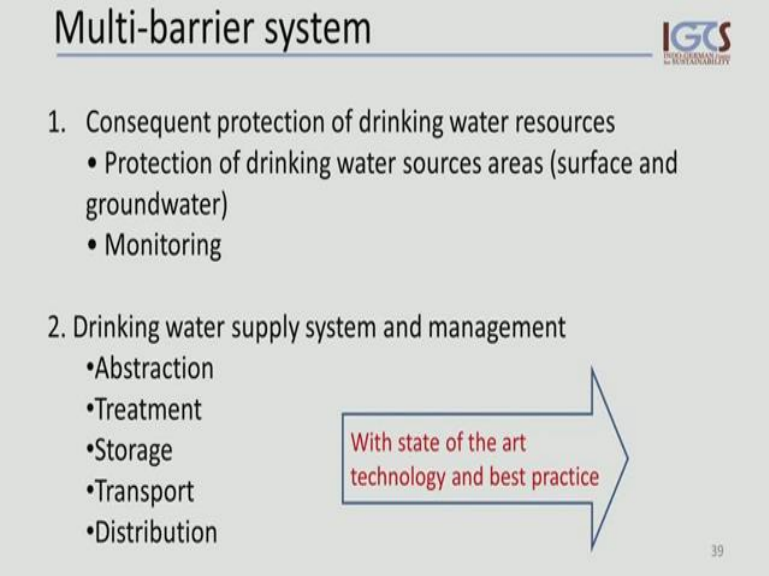

This means it starts from the source of the water; it includes the water resources, which means the aquifer, the water body, the land where the water comes from, the streams come from, where the water capturing facilities; the supply system, the distribution system, up to the household installation. So, this is a very comprehensive system, which helps reduce costs and risks, and surplices in those water supply chains. Now, let us look into this little bit

closer. In the first place, we have this consequent protection of drinking water resources; that means the protection of drinking water source areas, which include surface and ground water, and the implementation of a monitoring system, linked to this water, drinking water abstraction. Then we have the second stage; the drinking water supply system and management, which includes the abstraction point, abstraction techniques, treatment, storage transportation and distribution of water, as a whole chain from what type of material we use there; what type of technologies are used to treat the water to transport it, to store it; how long it will be stored? All these are part of this drinking water supply system management, and all this has to work with state of the art technology and best practices.

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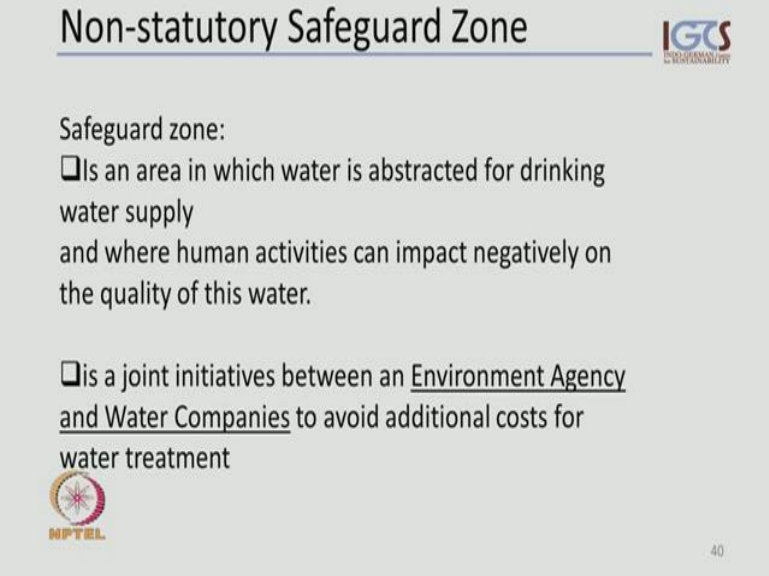

We moving into, just stepping into this water protection and source water area protection. Not all of the countries have provisions to declare or protect such areas, but they have introduced something, that is called non statutory safeguard zone. In such safeguard zones, all areas in which water is abstracted for drinking water supply and emphasis on drinking water supply, and where human activities can impact negatively, on quality of this water. So, there is an expectation that potentially, some of the human activities can have a negative impact, and we try to prevent such things from happening. For that reason, safeguard zones are created and interesting in this is that, this is being implemented as a joint initiative between environmental agencies and water companies, such water supply companies. This is to basically avoid additional costs for water treatment in the first place, and secure water for industries, for residence, for people in general.

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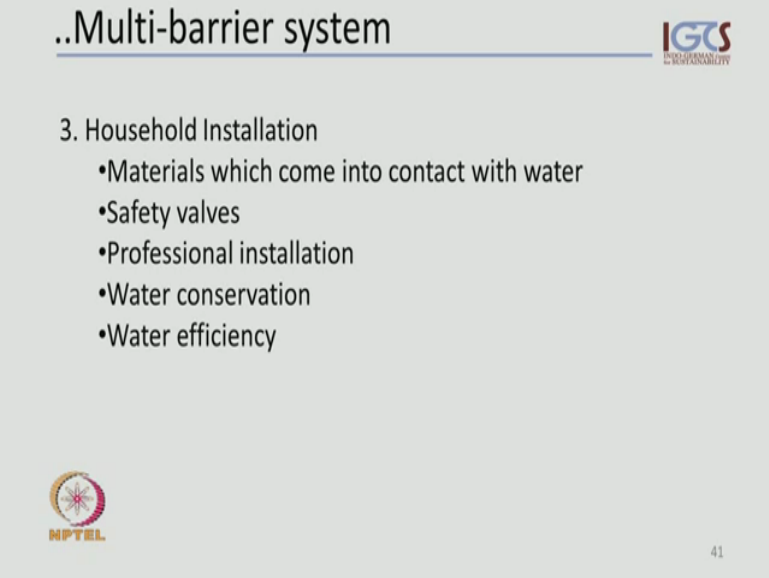

Now, let us look into the third part of this multi-barrier system; look into the household installation and this is a very important part also, which is often left out, because we only make sure that water is taking to the roads or to the doorstep of a household, but important also, is what happens when from this point onwards. This means that we have to make sure and produce the materials, make them available in the markets at a cost that is affordable to people; that those materials, which come into contact with water are good and not adding pollutants to the water; that the water quality that has was delivered to the household; this end household distribution system is not deteriorated; that there are safety valves in place; that there is a professional installation of these systems being done; that water conservation has been observed and the water efficiency is important. There are spot technologies for this, which water, can water, amounts of water quantities can be controlled and much more efficiently, being used today at household level, through these new technologies.

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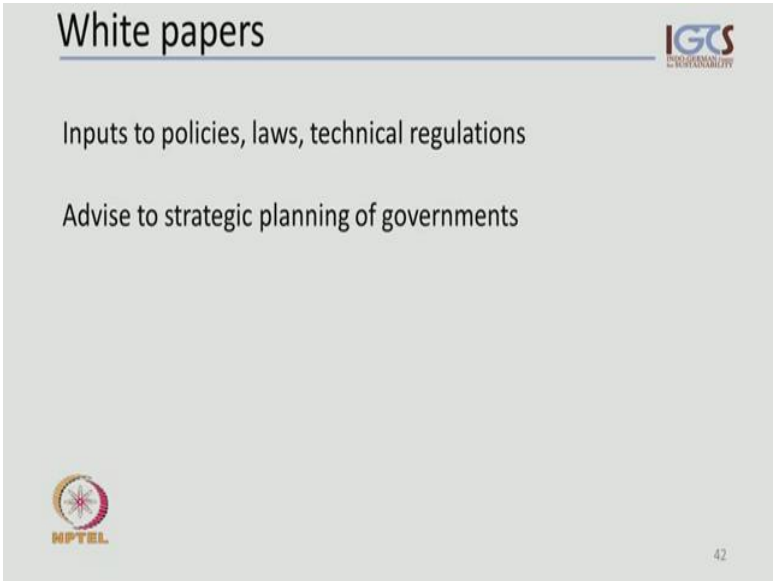

Now, finally, I would like to speak about white papers; those inputs from such water companies or companies in the water sector on certification and on regulatory frames, on regulations and laws. Those companies provide inputs in the term, in the form of so called white papers to policies, to laws, to technical regulations, but also to strategic planning of governance. Those are very important and should not be underestimated in terms of knowledge inputs and also, in terms of influence.

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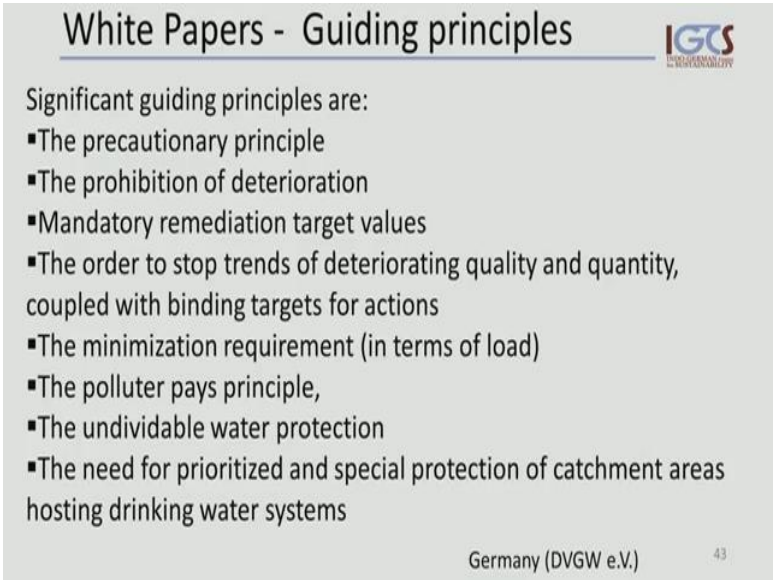

Now, just an example and some of these guiding principles, which were developed by industry associations in the form of individual white papers, which were adopted by these

industries. One of those known probably, to you is the precautionary principle. This is to prevent, rather than causing the prohibition of deterioration. The mandatory remediation target values that industries not only households, but industries, water users bulk water users have a mandate to remediate down to certain target values, which have to be defined, somewhere. The order to stop trends of deteriorating quality and quantity, coupled with binding target for actions, very specific again; this is to stop certain trends, even if the problem as such or the pollution is at a level where we would not call it problematic, at this point.

It is accumulating; it is adding up and as the quality deteriorates at one point, we reach a dipping point, which then results in catastrophic situations, with regard to water quality and quantity. So, this should be linked to action. There should be clear targets. There should be a clear knowledge on what is the base line against which, we are monitoring our trend here and what is the arrange in which, no action is required and what is above the range, where action should be triggered and what type of action should then happen and be triggered? Should industries be shut down for instance, or should agriculture move to different crops production cycles (refer Time: 35:40) cycles? What should be the action here or have in the extreme events, when we have cost certain dipping points? Should water supply be shut down or should public water infrastructures like swimming infrastructure be closed for certain time? Should industries be shut down for that reason? The more of these guiding principles are the minimization requirement; this in terms of load. So, this requires measurement. One principle that is also probably known to most of you, is the polluter pays principle. This is wherever, there is pollution be detected in a water body, that this, there must be a possibility to trace it back to the polluter, and the polluter is made responsible for the cleaning up of the pollution.

In many cases, this may not be possible as we have talked about those non point pollution sources. In many cases, there might be possible to do trace it back to certain polluting industry, but it may be in different informal sector and difficult to handle under the legal frame, that access. There are many reasons for why these polluters pays principle is very difficult to implement, although many countries have included it into their water flows and water regulations. Then the undividable water protection; this means that there is no compromise to be made when it comes to water protection. Water protection is in the first place and then, other some priorities come. The need for prioritized and special protection of catchment areas, which host drinking water systems and this, is for drinking water systems. This means when a pipeline is being built from one source area to a large urban area, for

instance, that anything it happens along this path and this pipeline system has to be also under certain special protection to make sure that water arrives safe at its final destination. Now, with this I want to close our module 3, the challenges and now, the next time, we will be moving into the river basin management, and the solutions to some of these challenges discussed right now here. I will see you next time again.