

**Inaugural Address**  
**By**  
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**&**  
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Good morning. Dignitaries on dais, distinguished participants from India and abroad, media representatives, ladies and gentlemen:

By this stage of the proceedings, people are feeling slightly sleepy, as all of you have got up early and come here, so let me shake you up a little.

First of all, the Cement Manufacturers Association and the Institute of Industrial Productivity deserve our appreciation for organizing this international conference immediately after one year. Normally the international conferences are short lived species. They take place once and that would be the last one. So, they deserve our appreciation I also thank them for inviting me to deliver this Inaugural Address.

First a caveat, I left the Government 3 years ago and what I am going to tell you is based on my personal thoughts and observations. My predecessors had delivered very detailed informative and fruitful addresses. But what I intend to do is to look at the broader picture, do some crystal grazing and talk about the shape of things to come - more in the nature of food for thought, than solutions.

***CEMENT***

Cement as Mr. Shatrughan Singh said, is the basis of modern civilization and I googled but I did not find any real substitute for cement. It is a versatile substance but very polluting, whether it is the mining of limestone and coal, whether it is sintering and grinding, or transportation or even usage. It does have an impact on flora and fauna, our forests, on environment, on health and social life. After all, when you do extensive mining, you displace a lot of people, maybe small number sometime but that is the only place they have to live. Cement production pumps back CO<sub>2</sub>, sequestered by corals and sea fauna over millennium, hundreds of thousands of years, into the atmosphere. Cement production, I did refresh my memory, is still somewhat of an art. It is not fully

scientifically understood. Lot of research is taking place. Cement demand in developing India is bound to increase. Ultimately it will peak may be like energy requirement and near 2045, cement demand will also peak. But till then, on the face of it, it has a good time to go.

## ***IMPERATIVES***

What are the imperatives, the key relevant imperatives for India today?

### ***International Imperatives***

There are three international imperatives. The first concerns the World Trade Organization, WTO. As you must have read, this multi-lateral agreement has been progressing satisfactorily. We gave them a fright last year, but now everybody has agreed upon what is to be done. In the years to come, there will be lowering of the tariff barriers. Imposition of the non-tariff barrier will be progressively more difficult and the anti-dumping measures will give lesser relief because the appellate mechanism will become stronger. Linkage of trade and environment is a worrisome feature because now that food security has been sorted out through negotiations, the next step perhaps will be the trade and environment. There is a distinct threat or possibility of the imposition of border taxes by developed countries on carbon content of the imports.

The Second global imperative is that of the climate change which a number of previous speakers have addressed or rather referred to. This climate change is not the climate which changes due to natural cycle or deforestation of the Himalayas etc. This is called anthropogenic global warming due to emission of Greenhouse gases. CO<sub>2</sub> has a residence time of more than 150 years, CO<sub>2</sub> which is emitted during industrial revolution is still up there in the sky, heating us like a blanket. Now the Cement Industry, many people must have told you, by now, is the third most polluting industry or third most polluting sector, after Power and Transport, through both production of cement and related fuel consumption. The UN system is interpreted to be very slow. Every year, there is a meeting which is similar. But this year is a special year, that in December 2015, the countries are aiming at an agreement. It is in the nature of an implementation agreement. The UN Framework Convention was agreed to in 1992. Adopted 23 years ago, how are you going to implement the Convention more forcefully is being scheduled to be agreed in December 2015. It is called universal agreement. But I must tell you this is not a “uniform” agreement. What I mean is, that the developing countries which underwent

industrial revolution much before us, have profited. That is why they are developed and we are under-developed. They have to take the lead. So, the coverage will be different for them and different for us. There is a phrase called Intended Nationally Determined Contribution. These are the contributions which various countries would put forward starting from March, going up to September 2015, about what do they intend to do, up to 2020 and up to 2025 or 2030. You may ask, what it has got to do with you. Countries like India will most likely give some kind of GHG intensity goal or target which translates into energy efficiency and ultimately how much CO<sub>2</sub> is emitted per tonne of the finished product, whether it is steel or cement or whatever. On the other hand, INDCs will also talk of adaptation efforts. Since a part of climate change is inevitable, even if you stop emitting all the GHG, how do we adapt to climate changes impacts. That you will be happy to know, will increase the demand for cement. There is something which is still a small cloud on the horizon. This is an idea that fossil fuel usage should be totally phased out by the year 2050. No fossil fuel should be burnt. This is called “unburnable carbon”. This idea is finding resonance in the US Universities where the present pressure is that they should divest from the shares of the fossil fuel Companies. They say, keep coal, oil and gas underground and don’t produce it. Because if you produce it, then cement companies and others will burn it, increasing the CO<sub>2</sub> concentration. That is something we in India, in the developing countries are worried about because if it proceeds further, our development path will be in jeopardy.

Third global imperative concerns the sustainable development goals, SDGs, which are to be agreed upon in the United Nations in September this year. Poverty eradication is the first goal. Eradication of extreme poverty by 2022. Then, there are goals which concern water, forest, and sea and then there is a goal about energy and energy poverty. There is a goal about habitation. Ultimately SDGs are trying to have a more egalitarian, prosperous and greener world. The prosperous world, I think, is of resonance for you, because prosperous world would need lots of cement.

### ***Domestic Imperatives***

What are the domestic imperatives? I am going back 60 years. Because Constitution of India is a living document and due to the Supreme Court, it is a document which is alive in our minds, if not in our hearts, and it is an egalitarian Constitution having clear cut Directive Principles of State Policy. That is, these are not exactly fundamental rights but these are something State

should endeavour to achieve as we develop. One Principle mandates that the material resources should be distributed for common good. The changes which have recently taken place in the MMDR Act are a resonance of this Directive Principles. This is also in the nature of sustainable development. Some good things have also happened in 1975 Emergency. There is a Directive Principle introduced then that the State has to promote environment and there is a fundamental duty of all citizens, including all Indians, sitting here to protect and improve natural resources. The word Poverty Elimination has entered the national discourse last year, both President and Prime Minister said so in the Parliament. Poverty elimination is not just getting more income to the people. It is a roof over their head, getting two sets of clothes, not to have to worry about their next meal. Roof over the head again is something which is relevant to your sector.

As for Laws and rules, there are numerous laws and rules. The initial thrust of course was on health and safety, as in the Factories Act. Then came the management and protection of environment and forests, through the FC Act, the EP Act etc. Now the thrust is on prevention and compliance. What is interesting and relevant to you is, that in the environment field, the law is mostly operated through subordinate legislations – The Rules – like Environmental Impact Assessment Notification, and CRZ Notification. You are of course in the context of AFR aware of the Hazardous Substances Management Rules. It is the Rules which you have to keep your eyes on.

Then, comes the role of the judiciary. Last 20 years, the environment and forest policies of the Government have been shaped, if not sharpened, by the judicial intervention mandated by Articles 141 and 142 of the Constitution of India. Article 142 says that judgment of the Supreme Court is the law of the land. And there is also the writ jurisdiction of the Courts. Now the new game changer is, “the National Green Tribunal”. It was basically meant to be an adjudicating body but now if you have been reading the newspapers, NGT is setting the agenda for the Government and for the society in the last 2 years. It is not always anti-industry agenda, in the Nirma case, for instance, they did give their ruling in favour of the industry. I think, NGT is going to be the game changer in the years to come.

Democracy in action is another domestic imperative, all of you from India know, what happened in Delhi elections. We have got today a much younger India. Average age of India is, one-third of the average age of people

present in this hall. Today there are immense aspirations and expectations. The power of social media, and visual media, the power of internet, the mobile penetration, have shifted the checks and balances in favour of the common man as against, let us say, the Government or the big companies. Expectations of people about pollution reduction and economic growth have increased manifold. Transparency has increased due to IT. You can go to a PC and download a Google map, you can get fairly accurate picture of this very hotel, maybe only 3 days late. But earlier, the huge forest would have been cut down, nobody would know for months or years altogether. Now you can know within days. This is a game changer for democracy in action.

Rural-urban shift, Mr. Singh did mention about it. You know, 80% of India no longer lives in villages. In fact, 80% of India does not want to stay in villages. They want to go in places where urban amenities are provided. So, either you provide amenities in the rural areas or rural people will shift to urban areas. The demand for pucca multi-storied houses, and decent infrastructure is unstoppable, whether Government plans it or not, whether industry can supply the goods or not. This is an unstoppable movement with an accelerating shift.

Now I come to the climate change impact. At regional scale, climate change modelling has not progressed so much. But whatever projections are there, they show that the monsoon variability will increase manifold. Rain fall intensity and variability, the droughts and floods cycle will increase. Sea-water level will rise and salinity levels will increase. What now we need to note in the context of this Conference is that there will be more stringent norms for constructing roads, bridges and buildings ; those of you who are from India might have seen the visuals of the 2014 Uttarakhand floods. It was astounding to see the way river flood water just took away with it, the buildings, bridges, the roads and all.

Energy security, is the last domestic imperative. Coal is our main fossil fuel resource. We in India depend substantially on oil and gas imports which impact all sectors of our economy. Fortunately, the Finance Ministry is heaving a sigh of relief with oil being \$40 per barrel. But if it were \$140 per barrel, all will have sleepless nights. Renewable energy is yet to flower fully and there is the unsolved limitation of intermittency. When there is no sunlight, how do you get power from the solar panel. When there is no wind, how do you get energy from the wind mill, which would be sitting idle. Energy efficiency is one viable option. Constraints on energy usage impact our growth, impact the poverty

eradication, impact the social development and poverty can get eliminated only if energy poverty is eliminated. Proper allocation of energy will be the key. When I say 'proper allocation', historical allocation of energy to various sectors won't work today.

### ***Implications for the Indian Cement Industry***

What are the implications of the imperatives which I have mentioned, for the cement industry. I think, there will be couple of principles, which the Association might like to take a note of and may hold discussion internally. You may agree or may not agree fully, you may have to fine tune it.

### ***New Principles and paradigm***

The first implication is, that natural resources will need be sustainably or optimally utilized. Land has also to be considered as such a optimal resource. Second, implication is the need for optimal utilization of energy and sustained reduction- not status-quo reduction- ; of pollution, whether air, water, soil or noise. Swachh Bharat, let me remind you, is not merely about cleaner streets. But it is about cleaner air, cleaner rivers, clean water and so on. Right from now, the organization like yours should start thinking, talking and dreaming of the global quality inputs, whether it is coal, or limestone, wash it, sort it out, beneficiate it so that the best global quality inputs are there. Intermediate product like clinkers, lot of improvements can be there. And for the final product, cement we need to improve the range and its variety. Use of supplementary raw materials is part of these new principles due to these imperatives, like use of fly ash, and blast furnace slag. This will reduce the limestone requirement, improve the present cement quality and help with the co-benefit of reducing CO<sub>2</sub> emissions. Romans used volcanic ash that was how, Pozzolana cement came about. So, why not we use more and more fly ash. Bureau of Indian Standards should quickly study the international experience and mandate the 40% use of fly ash. As regards the use of fuels auxiliary to the fossil fuels, to my mind, the basic purpose is not so much to reduce the coal or petcoke use but to dispose of the wastes in an environmentally safe manner., Most of the places our waste management practices are awful, they are terrible, they are horrible. It is basically not that, you people require alternative fuel and let us go for AFR. The AFR drive should come from the fact that our waste management practices are very, very bad. This is one unique way through which, you eliminate waste, you eliminate poverty, you eliminate pollution. Then, the last principle is the better process

control and quality control through IT. The last couple of principles are especially relevant for the Make in India campaign where both the process and the products would need to be the best available globally.

About Laws and Rules, I note there is a separate session for this subject during the Technical Sessions. You have specialists to deal with the environment. To my mind, no new laws are needed. The existing laws are good enough. What is needed is, a paradigm shift in the way you need to look upon the compliance of laws. There should be self-discipline, self-reporting and self-compliance. That should be the new norm. Please believe me, there will be more stringent implementation of all the Rules, as time passes. It will be local People who would be reporting on you, that smoke is coming out, dirty water is coming out. Besides, the CSR, the Corporate Social Responsibility, there has to be Corporate Environment Responsibility also. In Steel Authority of India, SAIL, where I am an Independent Director, we have ensured that environment matters should come up to the Board. Why, because if things go wrong, if polluting machines are shutdown, the polluting plants are closed, even for one day, then for a continuous process industry, it is a disaster for the company, for that quarter, if not for that year. CSR is not just a way to have more schools, and provide scholarships etc. No. CSR should be taken more seriously and done transparently, I am happy that there is a separate Technical session on this. There are issues like mine closure and site restoration, which we just keep aside in the corporate planning or wherever and we say, we will see it later, what is the hurry. These are the kinds of issues where best international practices are readily available. Site restoration plan has to be started right from the beginning. You have to plan for the mine closure, from the very day you start mining. These are the kind of things which need to happen. I mentioned about Google maps. There will be increasing emphasis by the regulators about the use of satellite mapping, IT, and continuous air and water quality monitoring. So, you better start doing it yourself rather than somebody else telling you do it, or somebody else doing it for you.

### ***Business Impacts***

These are some of the business impacts foreseen due to these imperatives. Indian cement will need to compete with the global imports on the price, the quality and the variety. There is no way to stop it, I mean, the Ministry of Industries will be very supportive of you, even perhaps the Ministry of Finance, but WTO commitments are there. Tariff barriers cannot help you much longer.

Business as usual projections, usually state that since we grew from x to y in so many years in past ; we will grow from y to z in so many years in future. That will not work. Past will not be a good guide for the future anymore.

Older plants need to be definitely upgraded and modernized. New plants would need to be of best international standards. Special sectoral treatment would become increasingly difficult. I leave it at that for you to understand.

Most Multi-national companies, I was going through the brochure of CMA, are present here. They won't be able to treat their Indian Plants as mere profit centres. Multi-national companies whether they are CMA member or not, all these MNCs would need to apply the same norms, systems and practices, as being done abroad by them despite the cost. That is the shape of things to come, and CMA would encourage it. Since this is an International Conference, this is something I thought I will flag. We, in India can learn from China, EU and Australia. The way, China moved quickly in technology adoption, they moved really fast. In European Union, pollution norms are very stringent. I was talking to friends from Australia. I am sure, we can learn a lot from each other. My last business point is, the excess capacity is something that almost all the cement companies have. But excess capacity problem, to my mind, would not have been there, if the Banks had done their job properly.

### **THREE PARADOXES**

There are three paradoxes which came to my mind. The first paradox is that there is such a wide gap between the worst and the best performing cement plants, whether in India or globally. The second paradox is the present wide gap between the best and the worst polluting limestone and coal mines, whether in India or globally. The third paradox is, since I have been in the administration, and I was also in the Central Pollution Control Board, I could not find reason for it, is the widely different performance on the use of alternative fuels or raw materials in the neighbouring States of Maharashtra, Gujarat, Madhya Pradesh and Rajasthan. You need to deliberate and resolve these paradoxes here or later on.

### **USE OF ALTERNATE RAW MATERIALS AND FUELS**

Now I come to the main topic, the use of alternative fuels and raw materials. I have four points here.

The first is the use of alternative raw materials. It is easy to resolve because, the suppliers of products are from large power or steel plants; and the consumers are also large cement plants. CMA should interact with the Indian Steel Association and the Power Producers Association. The Department of Industrial Policy and Production, DIPP may like to interact with the Ministry of Steel and the Ministry of Power. The Action Plan of 2014 presented last year is more or less okay. What is needed now, is the stringent enforcement of the Fly Ash Rules. These Rules are under the Environment Protection Act; they are just not being implemented stringently. But the cement factories must also be prepared to make some payment for the fly ash as a pull factor.

The issue of alternate fuel is much more complex. The calorific value of municipal waste in India is low. There are intractable problems of collection, sorting and transportation. But these problems are not totally insoluble as the State of Gujarat has shown. Tamil Nadu has also shown that to some extent. I have read that the city of Panjim, effectively did their municipal solid collection, and streamlined the processing although Panjim is a smaller city, as compared to larger cities. I note that the data given for all the parameters in the Action Plan pertain to the year 2007-08. We must update the data given that 7 years is a long time. The whole profile of all these materials, alternate fuel, may have changed. The mapping of the availability of AFR with cement plant also needs to be re-done or updated. The supply push, and this is my specific suggestion, needs to be created, by sensitizing urban local bodies or manufacturing associations, or NGOs and by stronger compliance with the available laws and rules governing disposal of waste. If I am producing waste and I am not disposing properly, then I should get punished. It should be the polluter who should be chasing the elimination of the waste through cement plants or whatever. The demand pull, this you may not be agreeable you have to think about it. This kind of dispensation will come sooner or later. The demand pull has to be created by stipulating TSR, I am thinking of the analogue of the renewable energy obligations on the Discoms that is all the electric supply companies are mandated to source part of their energy from renewable energy producers. All Cement plants should have a TSR, thermal substitute rate obligation. It can start with 0.1, 0.2, or 0.3 per cent and it can rise gradually every year and so we tighten the screw slowly. I think, this push and pull could make Alternative Fuel usage grow much faster.

Now my third point is, that the Action Plan of March 2014 seems imminently implementable. But how will it be pushed in a time-bound manner?

The time frame of implementation is not specified. This matter is something that can be discussed in each of the 5 Technical Sessions, and specific short-term to medium-term road map can be the output from each of the sessions. For long-term, I believe, technology is the key. Here again, each session can devote some time on long-term issues which then can be re-visited during the subsequent future international conferences.

My last point is that role of CMA would be crucial in successful implementation of March 2014 Action Plan. I note that you are the association covering most of the large plants and some of the MNCs. You could do some brain-storming internally and maybe here in the Conference too, as to how other cement plants can be brought on board. I did meet somebody who is not a member of CMA but who came to see, what is going on here. And then, you need enhanced involvement of stakeholders, other than Government, like the NGOs, the State Governments, the academicians, you think deeply about it. Lastly CMA could think more about the Japanese concept of 5 'R's, namely Recycle, Recover, Re-use, Re-think and Re-create. Especially the last two Rs - I repeat, Re-think and Re-create.

## **CONCLUSION**

What is my Conclusion today? Indian cement industry in the years to come will face a more competitive, carbon-constrained, resource-constrained operations, coupled with rising expectations from the people, about lower pollution levels, better quality of products and lesser disruption of their lives. Legal and regulatory hassles can best be dealt with, through self-discipline, and proper implementation of corporate social and environment responsibility. The 2014 Action Plan now needs to be implemented vigorously. Gujarat experiment has to be replicated across India. In view of the importance of the matter, a suggestion from a retired civil servant, to Mr. Shatrughna Singh, AS DIPP. You have so many review mechanisms. But you can have a review mechanism at your level, bring together the relevant Ministries and the key stakeholders and push it. Maybe one meeting in a quarter may push in the beginning and later on, maybe one annual review. That is one way to do it. The other way would be, involve the State Governments also in a similar kind of push. Because for the stinking garbage, they are the ones who face the music. For Actions beyond the Action Plan of 2014, I am now thinking beyond your action plan, Technology is the key. What we should do is to aim high, at the Green Cement. What is Green Cement, it is that cement which will have significantly reduced consumption of natural resources by using recycled materials and alternative

fuels. Let us also aim at the Leap frogging Technology, not a step by step change, at the cutting edge of what is available. What was available maybe 15 years ago, you can get it cheaply. Let us get the latest technology that is available. So, leap frogging technology by commercially manufacturing in India the latest products. Some three examples, I have found, you are surely aware of it, the first is very finely ground cement, the second is silica fume cement and the third is nano concrete. Only then, truly we can claim, the Indian cement industry to be world class.

I will end here with the hope that enough food for thought has been provided by me. Please do take it in the questing spirit that I have given.

I hereby inaugurate the deliberations of this International Conference.

Thank you.