

## **INDIA'S POLICY MILIEU: A SERIES OF DIALOGUES**

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### **ABSTRACT**

As a science student, I gave vent to my growing interest in international relations, policy making, nuclear non-proliferation through participation in Model United Nations' conferences, parliamentary debates, and online courses in law, corruption and environmental law and policy, etc.

I was keen to pursue my passion for these subjects in a more structured format and thus applied for the Yale Young Global Scholars Program in International Affairs and Security. It was here that I felt a sense of liberation and delved into topics like cybersecurity, workings of the FBI, nuclear non-proliferation, etc. I along with three others authored a research paper on nuclear non-proliferation as a part of the YYGS Capstone project. This enriching experience led me to taking independent research projects that had been close to my heart, but lack of know-how dissuaded me to venture into it.

I was keen to intern in one of the think tanks in Delhi during my summer break of 2017. However, none of the think tanks and research policy institutes take high school interns. I was a bit disappointed but what sparked off after this was an idea to have dialogues with policy analysts. I started mailing to experts in policy-making in various fields that interested me. The journey began in August, and after many discouraging responses, I got acquiescence from four experts in varied fields. I am truly grateful to all of them who have taken out time, despite their hectic schedules and travel.

I have chosen four topics under policy-making including Counter-Terrorism, Nuclear Non-Proliferation, Climate & Food Security and Cybersecurity. Each topic is explained in a question-answer format. I prepared questions on each topic with a purpose to understand the real scenario through their voices. In Counter-Terrorism, I have touched upon the sensitive issue of the Indo-Pak relation, the rising influence of China, the power tactic employed by Russia and the role of U.S.A. in matters about terrorism. When it comes to Food Security, it's an issue that is very important for a developing country like India. On one hand we are a growing economy, on the other hand, hunger levels do not see a decline, what seems to be the hidden reason behind this

chasm-delving thus into the Food Security Act and its hurdles, climate constraints for an agrarian country like India and moving on to Africa, that has been too suffering from severe malnutrition and drought issues in many of its states. In my dialogue exchange regarding Nuclear Non-Proliferation, my focus is not only the Nuclear Non-Proliferation Treaty but the reasons behind its inefficacy, its loopholes, and the challenges that the world is facing due to countries like Russia, China, North Korea, India and U.S.A in this whole gamut of the nuclear power play. Cybersecurity is an area that recently caught my interest. I had attended a lecture conducted by Professor Ted Wittenstein on 'Cybersecurity' at Yale Young Global Scholars Program this summer which shaped my perception about how it has become a national policy priority for all nations, something I never perceived earlier. Cybersecurity in a holistic manner encompasses economic, social, educational, legal, law-enforcement, technical, diplomatic, military and intelligence-related aspects. I was fortunate to get the support of an expert in Cybersecurity, Mr. Subimal Bhattacharjee, who also agreed to become my research mentor for "India's Policy Milieu." I was keen to understand the various malicious actors involved in cyber threats who had aims beyond economic gains. Issues like the rising influence of China in the field of espionage; the actors behind the Stuxnet worm; the use of cyberspace in terrorism and the misleading Trojan horses in the field of cybersecurity; cases of espionage by Russian based alliances were a matter of concern for me. When I first met Mr. Subimal Sir and discussed the Cyber-Security questionnaire briefly, he recommended me to read one of his articles on cyber-related issues; I found a lot of my answers from his published report.<sup>1</sup> Despite very hectic traveling, he took out time to meet me again and patiently responded to my queries, peppering our discussions with current global issues to help me understand a topic I was not adept at. There is a need for the development of policies to support the development of a more robust cybersecurity industry sector; partnerships with Internet Service Providers (ISPs) to address the botnet threat and a strategic cybersecurity R&D programme.

**Keywords:** India's Policy Milieu, International Relations, Policy Making, Counter-Terrorism, Nuclear Non-Proliferation, Climate & Food Security, Cyber security



**In conversation with:**  
**Major General Dhruv C Katoch**  
**Director, India Foundation**  
**Editor, SALUTE Magazine**  
**Secretary General, Indian War Veterans Association**

### **In short, what is terrorism?**

Terrorism is tool and pursuance for foreign policy. The very concept of terrorism is to win a war. Terror is used as a tool to achieve a political objective. Take the example of the founder of Mongol Empire, Changhez Khan<sup>1</sup> who brutally followed the principle of - either surrender or get killed, incited terror and thus won every invasion he undertook.

### **What factors has given a new dimension to terrorism?**

Earlier, terrorism had certain and restricted objectives. Now with the advent of electronic media where by distances don't matter. And availability of high quality weapons, one man can spread terror among 200 plus crowd of people. A single man can hijack a plane and cause a nation fall on its knees; cause a hundreds of airports to increase their security systems; you go to a mall and go through various checking procedures before you actually enter, inconveniences that are increased due to terrorism.

### **What is the basic genesis of the concept 'terrorism'?**

Terrorism has evolved out of a political ideology of a country vis-à-vis a counter political ideology. To quote a few examples, the Ireland insurgency or The Troubles<sup>1</sup> main point of contention was to have an independent Irish State, it was fight to end the British rule in Ireland and reunification of Ireland. All those who were a part of the upsurge were termed as Irish terrorists; similarly in Sri Lanka, Tamils wanted a separate state, a Tamil homeland and thus groups who propagated this demand (LTTE, EPRLF)<sup>2</sup> were termed Tamil terrorists; similarly in India, the Sikh upsurge for a *Khalistan*<sup>3</sup> led to the term *Khalistanis*. So when Islamic people want an Islamic state, they are called Islamic terrorists. That's how the generic name of terrorism has emerged.

### **It is believed that terrorism is used by non-state actors, then how can insurgency flourish for decades?**

No insurgency can flourish without support. There is a simple matrix of any terrorist insurgency- a nation state has a problem with another nation state; the former nation state identifies the problem of the latter nation state and it provokes the use of terror to achieve its political objectives. Take the example of the Nagaland insurgency in light of the universal matrix behind

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<sup>1</sup> <https://www.biography.com/people/ghenghis-khan-9308634>.

<sup>2</sup> Liberation Tigers of Tamil Eelam, Eelam People's Revolutionary Liberation Front

<sup>3</sup> The **Khalistan movement** is a [Sikh](#) nationalist movement, which seeks to create a separate country called **Khalistān** in the Punjab region of South Asia

terrorism and involvement of state. The Nagaland insurgency had various reasons that included demanding greater autonomy, ethnicity etc. The question arises, how can a bunch of Nagas in a remote area organize and finance themselves as to cause an insurgency. In this case, they were supported by the Western mainly few European countries and later it was known that the Christian Anglican Church of U.S.A. had a clear agenda to convert the entire state into what they perceive as a Christian State which would be very receptive to western ideas and thoughts and in conformity with western political interest. This was used as a pressure tool against India.

Some insurgencies arise due to internal political policies without the involvement of a foreign hand. A typical example was the Assam insurgency which involved firm system of vote bank politics by a particular political party (in this case, Congress). Assam insurgency was caused not because of issues of greater autonomy or ethnicity, but because Assamese felt they were being made to lose their homeland by the influx of Bengali Muslim Bangladeshi. With their advent (a planned strategy by the Congress party to win over the Muslim votes) the demography of Assam started to change, resistance turned into an upsurge. The problem still persists today. Once such deep rooted problems set its base, foreign powers will try to take advantage of the trouble of another nation state if it suits their political interests.

### **What is your take on India's Policy of Non-Alignment?**

India's foreign policy post-independence had two power blocks U.S. led Western Block and its Allies and U.S.S.R. led Communist Block. However, India chose the path of Non-Alignment as it didn't want to align with one - which is why, I feel, both sides ditch you. The Non-Aligned policy didn't do much good and those policies are now changing, which doesn't mean that we don't follow an independent policy. I strongly believe that aligning with one power block that suits your national interest doesn't mean you are compromising on your policy. One must vary the policies to suit one's existing climate, when you are non-aligned, none of the sides support you.

### **What are the important tools for an affective foreign policy?**

According to me, if a country wants its voice to be heard, it needs two foundational blocks – first to get your country's economy in shape and secondly get your country's militarily strong. When these two foundational blocks are in line, one can establish leader-to-leader relationship and build good friendships .And then one telephone call can do a lot many things and that's the essence of a good diplomacy.

### **Sir, could you kindly throw light on the Indian Foreign Policy in context of Indo-Pak relations?**

As a foreign policy analyst, Kashmir is simply not just a territorial dispute. Pakistan state came into being on basis of religion that they wanted a state for the Muslims of India. Once Pakistan came into existence, then, why did the conflict remain? Firstly, Pakistan is the antithesis of India. If Pakistan was to be India, then why did in the first place become Pakistan? Pakistan wants to constantly justify that they are different from India and cannot live with India. With this mind set and onset of education post independence, the children of that land were radicalized from childhood so they believed "Pakistan is what India is not ". Pakistan is playing a zero sum game with India that if India wins, they will perceive that Pakistan has lost and that they cannot accept. For Pakistan, both nations in a win-win scenario are unacceptable. It's the question of the mindset of a particular nation.

Secondly, since independence Pakistan army became dominant in Pakistan because they became a dominant party and wanted to pressurize their role, all power including civil function were dealt by the army. Once they got the power they didn't want to go let it go. However to justify its people and India was used as a cover to justify their powers. India was made the enemy of Pakistan; the Army coordinated the activities with the Islamists as their mind set was in congruity with that of the Pakistan army. If Pakistan was to be given the whole of Kashmir along with Jammu, still the disputes between India Pakistan continue. The reason is the weakness of Indian foreign policy which is that we have been trying to get Pakistan as a reasonable good and honest state and we believe it can be done. Instead we must believe that Pakistan is a hoax state and it will be hostile with India and one has to deal with it accordingly.

Foreign policy cannot be based on what you feel to be good; emotions have no place; national interest is what all matters. The power of Pakistan lies with the military and they will never give up on the power. The Mullahs need an enemy and that enemy is India so Pakistan and India will always be in a conflict, which is why we have never got over the conflict even after 70 years of independence.

Last three years, India's foreign policy has started changing. Pakistan has been bullying India, unless India doesn't send this message across, Pakistan will keep pulling India. It creates terror in Kashmir by sending so called terrorists who basically are Pakistanis serving life imprisonment in jail, they are told to spend few years in Kashmir and in return get waived off their life long term in jail. These men are sent to Kashmir with a gun and everyone starts respecting him. This form of terror has been promoted by Pakistan because it is free of cost to them. But what is the cost for us? If there is a one terrorist, India deploys thousands of army personnel, one incident occurs and the security across nations get tightened on the roads, at airports, malls, railway and metro stations. The counter to this cost free Pakistan strategy is to make it very expensive for Pakistan army to do what they are doing. For Pakistan, these scot-free prisoners-turned-terrorists

are strategic assets, part of groups like the *Laskar-e- Taiba*<sup>ii</sup> and *Hizb-ul-Mujahideen*<sup>iii</sup>. In this power play, a third party namely China enters. China is an upcoming superpower and China knows India is getting there too and under Chinese scheme of things **one mountain holds one tiger**, what I mean to imply is the thought process of the Chinese government- that this Asian mountain will hold only Chinese tiger so India has no space to equate with China. China thus wants to keep India under its control. On the other hand, India has a tolerant policy that gives space for other nations to grow concurrently. So how does China do this – it does by giving support to Pakistan. Thus the linkage between terrorism; conflict and foreign policy can be clearly elucidated through this power play. It suits China that Pakistan keeps infiltrating its strategic assets into India which is why China keeps supporting Pakistan materially through nuclear weapons and financially.

When China is competing with U.S.A. to make a bipolar power set up, U.S.A doesn't want China to get where it is getting, so it needs India to check China. For this purpose, U.S.A. needs India as a tool to check China so America is seen supporting India. However, there is no permanent interest in international relations and these permutations and combinations keep shifting according to need. The best advice that I give to all foreign policy analysts is to stop living in a dream world that things are not going to be okay because they won't so the best approach is DEAL WITH IT. Once you identify the enemy, then you have a policy to counter act.

**Has India's foreign policy differed pertaining to terrorism from the Obama regime to the Trump regime considering the bilateral agreement between U.S.-India Joint Declaration on Combating Terrorism related and the differing political views between Obama regime and Trump regime?**

As far as terrorism is concerned, India and US policy are synchronized.

**Terrorism stands at the crossroads between subjectivity and foreign policy. Nations mould the very essence of terrorism according to their domestic interests. An act of war might constitute as a terrorist act for X country but not for Y country due to the strategic power play between nations and their alliances. How do you view the use of terrorism by states and interpret this notion. Please elucidate.**

Look at the Iranians and their support to the Palestinians' cause, after that everything is a fallout of that support. You view Iran as terrorist state but Palestinians view them as messiah. So the question is that we are still not able to identify or give a definition of what is terrorism. You say that anybody who uses a weapon against a civilian target is a terrorist, even that would not be acceptable because most of the countries are doing that. The Americans have supported that-

What did America do in Afghan War, it supplied weapons and supported jihad just as Iranians supported terrorism. It's a question of narrative and who sets the narrative. I am a bit hesitant as far as most of these issues are concerned and when you look at our own Indian situation, Pakistan consistently says that they are not supporting terrorism but supporting a freedom movement. We have been very lucky in this world because we have disabused their notion as we have been hosting cold continuous elections in Kashmir that nullifies their notion of freedom movement. But if we look at Palestine, situation is different because Israel is an occupation of some of those areas that has been a part of the conquest of war and they will not let it go. They have U.S.A as their allies. For Israel, all groups like Hamas<sup>4</sup> are all terrorist groups and they will do everything to destroy them to the extent that they will hit Iran if required. That's the way Israel makes its foreign policy. If Israel feels that Iranians are actually developing a bomb, then they really won't bother about U.S.A. and take it out all on Iran regardless of cost.

In this perspective, it's difficult to sanction a country. Iranians openly support militant groups like Hamas as half of the world is with them. In United Nations, it is Israel that's getting censored not the Palestinians. There are different viewpoints to every situation.

Americans say that there shouldn't be any delay with regards to Israel which means India is developing strategic alliance with U.S.A., thus India shouldn't be getting friendly with Iran but in reality India is continuing its friendship with Iran. Do you think America is upset with India on this issue? No. It's because America wants some influence in Iran and they get it through India. They also want to know what's happening there so it suits their interest if India remains in amicable relation with Iran.

In foreign policy, everything is in a state of flux, there is nothing constant. There are no rules that if you are supporting "X" country, you can't support "Y" country because "X" is at loggerheads with "Y". To presume that one country can hold on its own and the world will censor it, is actually a false notion. We haven't been able to censor the Islamic State; America is supporting the Islamic State when it fights Iran, but when Islamic state fights Iraq, America opposes, it's a matter of what suits American interest. Each country plays its own national interest, some countries do better than others but at some point of time even countries like America has mugged up like in the case of Afghanistan and Iraq, the Americans didn't get down to the endgame. All pieces have to be in place right from the opening till the end game. America at that time knew the damage of supporting Islamic State and Afghanistan but at that point of time they had a bigger enemy, Soviet Union upon whose collapse one agenda of Americans was over.

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<sup>4</sup> <https://en.wikipedia.org/wiki/Hamas>



**India has been declared as the second worst-affected country by terrorist violence after Iraq as per the US State Department's Annual Report 2007. Do you agree?**

I don't agree with America's assessment declaring India as second worst state by terrorism. Whenever you have to look at a situation in context of comparative study, then, first and foremost is to calculate the percentages. Everything cannot be based on numbers so if you are saying that the number of terrorist incidents in India are a lot, it's important firstly to look at the fact that India has a population of 1.3 billion, secondly India has three weak hotspots-the North-East Block with all its 7 states; the Left Wing or the Red Corridor; the Jammu & Kashmir Block and lastly, incidences of terrorism across the entire state of India and fortunately for the last few years no incidences of terrorism have occurred in the rest of the country, as against Pakistan which faces terror incidents regularly. I don't know how this data is rated and what matrix has been used-what are the ground terms on which of which they are tracking? whether they have used no of security forces being killed or no of civilians or are they calculating in terms of incidents, are they not including countries like Afghanistan, Syria and Iraq because they are at war? Having said that I must admit that we have incidences that are high.

**How do you analyse India's economic sphere pertaining to the very idea of terrorism and its implications?**

Now, please analyse the way I see –India's economy is growing at 7+0% annually which is a macro augment. We are consistently being pulled back at the cost of insurgency; Kashmir is adding nothing to our GDP, on the contrary Indian state is pumping in money to keep that the state going; North-east has a great potential but is underutilized because of the conflict; the Red Corridor on the east coast from Nepal onwards to Kerala (in pockets has about 70-80 districts affected in which 20-25 are worst affected districts). Theoretically speaking, if some magic wand makes these states peaceful and start contributing like the state of Gujarat, the GDP itself will rise upto 10-12%. I would say it's not difficult to take India's annual growth rate to 15% but these three factors are driving India back as they together form one-third of the country. If these factors become negative to positive then the rest of the country comes in a positive cycle. And economy will keep enhancing. I unlike all defence analysts feel that India will solve the Kashmir issue in next two years and the first signs have already come from something that was defeatist now we see a strong uncompromising power at the centre, a powerful military and security at the top that has changed the mathematics. Earlier the government was apologetic, now the government is no longer apologetic and will do that has to be done. As regard to North east, the problem of illegal immigrants is there and they have been legalized; the demographics has changed and now there are no more illegal immigrants coming in, so the situation can only be contained by seeing that no further eruptions are happening. Nagaland and Manipur will not

improve for another ten years though they are moving inch by inch and the fellows are tarrying out but still it's a work in process. The Leftist Extremism will die down for the simple reason that the political penetration into the remote areas continues as a work in being, the capacity of the Maoists<sup>5</sup> to control the population will be diminished. A large part of the problem is caused by our own administrative failures; we have got a weak system, a very insensitive system towards the poorest and marginalised section of the society which requires a complete change of ideology and the transformation of entire administrative system. India needs great change in its administrative set up. But Left Wing extremism will not flare up to an alarming level and at the same time I don't see it going away say for the next 3-5 years, it might be contained but the police doesn't have the capacity to get away with it; incidences will be low. Overall the situation in the country will be conducive for a more peaceful environment. If the present government holds on for another five years, a total new India will emerge. So, when you guys are in your young years of job, you will have the best years in India as it will be worth living in. If the present government goes out of power and we form a coalition government led by the Congress, then we will revert back to the era of corruption, then all that I have said falls flat to the ground as the country will get into a negative cycle. The best era begins from 2019 and who wins the election.

**What is the best solution for India to adapt to the current tensions and what future policies do you expect to be taken by the government of India?**

We have adapted quite well, but if I have to give an opinion to the government of India is don't ever back down and get into compromising situations and agreements; stand tall, don't get bullied. India should be prepared to take that risk and make that note to your opponent, that it will not compromise on basic principles, on country's core interest—Do Not Compromise. We need to build that national character which has to come from schools, colleges, workplace and people need to be told that they are consequences of telling the truth, but unless you do that, it doesn't work. The grooming and building begins at school. How should we educate the people, why aren't Indians not sensitized towards building national interest -it all begins with good parenting and good schooling. Every time you have to stand up, stand up what you believe is right and stand up for the consequences. Start here and follow it up till the end, the country has to

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<sup>5</sup> <http://blogs.reuters.com/india/2013/05/29/who-are-indias-maoists-and-why-they-are-in-the-news/>  
The Maoists, also known as Naxals in India, are inspired by the political philosophy of China's late Chairman Mao Zedong. They say they are fighting for the rights of poor farmers and landless labourers. In 2004, several Maoist groups merged to form the Communist Party of India (Maoist), which is now the largest left-wing extremist organization in the country. Their aim is to overthrow the state and usher in a classless society. The Maoists are banned in India. They are not to be confused with the mainstream communist parties in India who regularly get elected to legislatures and parliament.

start here; the political party has to start here right from junior level, there are no short cuts. Once you start compromising as a little boy, then school boy then college student and then a young man, you always will, situations will change but the character will remain the same. For national interest too, we mustn't compromise.

## **INFERENCE**

As I began my interview with respected Dhruv Sir, we started with the fundamentals of terrorism. Terrorism is nothing but a tool of foreign policy used by governments around the world. Even though it lacks a legally accepted definition, the idea around which it lies is accepted in the international community. Terrorism has shaped India's domestic policy to an extent which no other factor has solely due to its geographical conditions placing it in proximity to the Middle East and Pakistan. With growing tensions with Pakistan and China who have bilaterally imposed challenges for India, the future remains uncertain unless American intervention is facilitated. The policy that Pakistan has used to back terrorism has led to India's army to be engaged mostly around the Indian border for optimum security, thus giving advantage to China to influence the region around the borders as the Indian government is consumed with the movement of Pakistani troops and militants. Also, shortage of army personnel gives rise to Chinese antics around the border area which the Indian army needs to focus. This is basically a short understanding about how a bilateral relation between two countries and the use of terrorism as a tool can benefit them mutually.

Terrorism finds different forms in different areas. From the Naxalites in eastern India to the Liberation Tigers of Tamil Eelam (LTTE) in Sri Lanka, terrorism always has a purpose. Its radical nature has led me to understand that it is not just an idea that came into existence through violence; it's a voice that advocates and proposes notions through violence that instills fear into us. This can be caused by a total media blitz that usually occurs after a terrorist attack. The media is an excellent window for the terrorists to vent out their demands immediately after an attack. The idea of terrorism therefore isn't just restricted to the radical Islamic association, rather it is found in different group of different religions. We saw that in the case of the Sikhs in the Khalistan Liberation or numerous attacks within the United States with an unknown motive.

The United States of America has always aligned itself with India in its fight against terrorism. From various bilateral to multilateral agreements, U.S.A. has negotiated various agreements to curb terrorism. This again is a tool of foreign policy because the U.S.A. doesn't want the rising influence of China to dominate over the P5 nations in the UN Security Council. This is just one of many examples of strategies used by nations in aligning itself to create relations in good faith and also for keeping a close eye on the different areas of the world.

The biggest loophole of terrorism is that it is state sponsored. From the AQ Khan network in Pakistan funding Hamas or private military contractors like the black water enterprises being aided by the U.S.A. or the intervention of Soviet Union in Afghanistan where the Mujahideen were backed by U.S.A. and China. The very essence of terrorism culminates out of the idea of state sponsorship because without it the finance and resources of these groups seems idealistic. Even today we see Iran backing non state entities that are fighting against Israel and many more notions which basically leads to the conclusion that terrorism is nothing but a tool of foreign policy.



**In conversation with:**  
Ms. Malancha Chakrabarty  
Associate Fellow  
Observer Research Foundation

## **What is Food Security? How do you view it pertaining to India?**

Food security is a very large concept and the most comprehensive definition came out of the World Food Summit 1996<sup>6</sup>

*"Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life."*

Food security means food being available to people and it has 4 pillars- production of food; availability in term of access to most; quality and stability of food. The most critical aspect is the access to food. Now how do I view it pertaining to India? So we have moved from the decades of 60's where we never grew enough food for our population so now we are largely self-sufficient in terms of growing food grains for our people particularly rice and wheat but when it comes to pulses and oilseeds, we have to import from other countries but largely we are self-sufficient in growing food grains. But for India the largest concern at this point of time is access to food because more than 70% of people in India are not able to access food that is nutritious, healthy and enough for their dietary requirements and for us the issue has shifted from production to access and when we talk of access then a lot of issues come in, then it's a question of fair distribution of income; then it's a question of how well your public distribution system is working; then it's a question of how the National Food Security Act<sup>iv</sup> is being implemented. Now, it also is an issue whether a family's ability to be able to access food depends on their ability to get Aadhar Card<sup>7</sup>, so it's much more complex for India. But also when we think about production, sometimes we tend to ignore the current climate context so we are operating in a very climate constraint world, although we produce enough food grains and the food stocks are sometimes more than we want and the Food Corporation of India(FCI)<sup>8</sup> has a lot of food grains, but in terms of the long term is our ability to produce - in an increasingly climate and water constraint (that is a huge obstacle)situation; sustainability issues are also very important in case of India. So, there are multiple problems.

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<sup>6</sup> <http://www.fao.org/docrep/003/w3613e/w3613e00.htm>

<sup>7</sup> <https://uidai.gov.in/about-uidai/about-uidai/vision-mission.html>

<sup>8</sup> <http://fci.gov.in/aboutUs.php>

The Food Corporation of India was setup under the Food Corporation's Act 1964 , in order to fulfill following objectives of the Food Policy:

Effective price support operations for safeguarding the interests of the farmers.

Distribution of foodgrains throughout the country for public distribution system.

Maintaining satisfactory level of operational and buffer stocks of foodgrains to ensure National Food Security

**India's poor population amounts to more than 300 million people, with almost 30 percent of India's rural population living in poverty? With deteriorating and ineffective distribution systems for food, how do you assess the gravity of this situation?**

In fact the poverty line itself is a complicated issue and now nobody is even talking about it; people don't even care about the poverty line any more. If we were to look at what the old definition of poverty line was, then even those who were above the poverty line could not access to food need to maintain a minimum calorie. There were slew of reports written by the erstwhile Planning Commission<sup>v</sup>. So, it's not 30% of the people who are below poverty line and cannot access the basic minimum food required, it's actually 70-80% of the population. There is even nutritional deficiencies among the better half of the people, so when we think of nutrition, the problem is even much more complex because food is not just calories, food includes a lot of other nutrients. It's really a gigantic problem. The Right to Food Movement that happened India that happened in the last decade tried to understand food as a basic human right. It was a very progressive movement which led to the enactment of the National Food Security Act and in terms of the gravity of the situation in my opinion is the single most top priority for India because at some level the legitimacy of the state itself is questioned if so many can't access a nutritious diet for themselves.

**Food Security has not found much importance in the international agenda even though situation in Africa is declining. How much of a source of food security is coming to India under this agenda and will it improve?**

I don't completely agree that food security has not been on the agenda, it's just that different countries are in different positions and different stages of development so their approach is different than the way countries negotiate with each other particularly in WTO<sup>9</sup> is very different. When it comes to Africa, the situation is really very bad and at this point of time it's very terrible but why it's terrible in parts of East Africa; Why it's terrible in Nigeria; Why it's terrible in Somali land, it's very different .Much of it is because of conflict so you can't look at food security and famine kind of condition that now prevail in Africa in isolation. It really is linked to the conflict that's taking place. Even Yemen was not a traditionally rich country but Yemen is now in a famine condition because of the Saudi Arabia blockade. The international community has had a very aid kind of approach. On one hand they are responsible for the blockade in

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<sup>9</sup> [https://www.wto.org/english/thewto\\_e/thewto\\_e.htm](https://www.wto.org/english/thewto_e/thewto_e.htm)

The World Trade Organization (WTO) is the only global international organization dealing with the rules of trade between nations. At its heart are the WTO agreements, negotiated and signed by the bulk of the world's trading nations and ratified in their parliaments. The goal is to ensure that trade flows as smoothly, predictably and freely as possible.

Yemen- I completely hold developed countries responsible for that. Even in case of Africa, the piecemeal approach of aid which FAO<sup>10</sup> and UN-OCHA<sup>11</sup> is giving is not going to solve problems in Africa. Then there existing vulnerabilities in East Africa which is that they have a very severe drought and it's a long drawn process because of the climate change and again climate change is a different complication in itself- countries aren't able to come together and take a decision and in some sense food security is the largest issue in the world itself at this point of time given the number of people who are suffering. The future is quite dark for everybody but given the complexity of the problem it is really not vanishing which I am trying to highlight. For India, our interaction with the world when it comes to food is:- We have traditionally had a very strong stance in WTO that for us our food security is of prime importance so to that extent we will continue to have agricultural subsidies, we cannot do away with them. We have been a very strong voice in the Doha Development Round 2015<sup>12</sup> and the G77<sup>13</sup> has largely been together in their participation, but many of the issues that we suffer from within the country are also a direct product of the inequality in the growth process which is literally pauperizing the masses. There is an international angle that we try and protect our farmers rendering subsidies-that how we engage in and also there is a huge domestic policies because of which are agriculturists are suffering and also in terms of access where there is a huge problem which is largely of distribution issue within the developmental model that we have.

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<sup>10</sup> <http://www.fao.org/about/en/>

The Food and Agriculture Organization (FAO) is specialized agency of the United Nations that leads international efforts to defeat hunger.

<sup>11</sup> <https://www.unocha.org/about-us/who-we-are>

OCHA is the part of the United Nations Secretariat responsible for bringing together humanitarian actors to ensure a coherent response to emergencies. OCHA also ensures there is a framework within which each actor can contribute to the overall response effort.

<sup>12</sup> <http://ec.europa.eu/trade/policy/eu-and-wto/doha-development-agenda/>

The Doha Round of world trade negotiations - also known as the Doha Development Agenda - was launched in Doha, Qatar in November 2001. The talks aimed at further liberalising trade, whilst making it easier for developing countries, particularly Least Developed Countries (LDCs), to integrate into the WTO multilateral system.

<sup>13</sup> <http://www.g77.org/doc/>

The Group of 77 (G-77) was established on 15 June 1964 by seventy-seven developing countries signatories of the "Joint Declaration of the Seventy-Seven Developing Countries" issued at the end of the first session of the United Nations Conference on Trade and Development (UNCTAD) in Geneva. The Group of 77 is the largest intergovernmental organization of developing countries in the United Nations, which provides the means for the countries of the South to articulate and promote their collective economic interests and enhance their joint negotiating capacity on all major international economic issues within the United Nations system, and promote South-South cooperation for development.



**Can you elaborate upon any reform in the field of food security in India and how have they influenced in the domestic sphere of India?**

Particularly the National Food Security Act is a very progressive development but the issue remains how it is implemented. The implementation is not to the level that we have desired. Also, in many ways NREGA<sup>14</sup> plays very important role in ensuring access to food because in the off season people were getting jobs that was contributing to the meagre resources. The withdrawal of the resources towards the welfare schemes is a big problem and I am particularly unhappy about that. Earlier there were a lot of schemes like ICDS<sup>15</sup>, I have written a paper titled 'Fiscal Restructuring and its Impact on Nutrition Financing in India'<sup>16</sup> explaining the loss of resources to the people by the Centre's initiative to curb the traditional welfare resources that were earlier. Schemes like the mid-day meal and ICDS scheme<sup>vi</sup> played an important role that the children get food. At one level resources are being curbed, at the other level needs are increasing, so it's not a positive development and the implementation of National Food Security Act is a poor implementation.

**The maintenance of a buffer stock is extremely critical in terms of food security. With respect to India, according to various reports the standards of buffer stocks especially when the farmer's family stocks it, is declining in quality and nutrition. How do you view such a situation?**

It's really a complicated issue because all farmers do not grow wheat and rice. What about farmers who grow commercial crops like ground nuts, soya beans? Some kind of basic stock farmers like to keep- but how do they keep? Do they have right storage facilities? The villages may be electrified but villages are largely not electrified, even if they are, they get electricity for

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<sup>14</sup> [https://en.wikipedia.org/wiki/National\\_Rural\\_Employment\\_Guarantee\\_Act,\\_2005](https://en.wikipedia.org/wiki/National_Rural_Employment_Guarantee_Act,_2005)

National Rural Employment Guarantee Act 2005 (later renamed as the "Mahatma Gandhi National Rural Employment Guarantee Act", MGNREGA), is an Indian labour law and social security measure that aims to guarantee the 'right to work'. It aims to enhance livelihood security in rural areas by providing at least 100 days of wage employment in a financial year to every household whose adult members volunteer to do unskilled manual work

<sup>15</sup> <http://icds-wcd.nic.in/icds/icds.aspx>

Integrated Child Development Services (ICDS) Scheme is one of the flagship programmes of the Government of India and represents one of the world's largest and unique programmes for early childhood care and development. It is the foremost symbol of country's commitment to its children and nursing mothers, as a response to the challenge of providing pre-school non-formal education on one hand and breaking the vicious cycle of malnutrition, morbidity, reduced learning capacity and mortality on the other. The beneficiaries under the Scheme are children in the age group of 0-6 years, pregnant women and lactating mothers.

<sup>16</sup> [https://www.researchgate.net/publication/319165072\\_Fiscal\\_Restructuring\\_and\\_its\\_Impact\\_on\\_Nutrition\\_Financing\\_in\\_India](https://www.researchgate.net/publication/319165072_Fiscal_Restructuring_and_its_Impact_on_Nutrition_Financing_in_India)

just 3-4 hours a day; do we have cold chain facilities? We don't. They are so many people that do not own land, they work at other people's farm, they are most vulnerable- they don't have their own land; they don't grow their own food; they work in other people's land, these are the people that are living on the margin; these are the people that are most dependent on welfare schemes, so it might work in case of larger farmers who are able to put in investments for storing buffer stock but for the bulk of farmers who have three or four tier land where they are growing two crops in a year, it's not a viable option.

**Being an important aspect of the domestic sphere, how do you assess food security in India and are there any alternates to it pertaining to the current norms laid down by the Food Corporation of India?**

FCI has its huge problems in terms of buffer stock, a lot of people argue that the buffer stock causing a problem because you have such a huge requirement for buffer stock that you don't release it in the market which causes the prices to be higher, so FCI has its own complications and dismantling those complications hasn't been easy because it's a big political issue in India. People argue that wheat exports should be allowed in certain years and you don't really need so much of buffer stock for all years and sometimes the buffer stock just lie there and rats feed on it, it's more complex than it seems.

**With the current trend in climate change especially in India, how critical is the issue of climate change when we access food security especially in India considering the vast population?**

It is very critical from all respects of food security especially from the production side because there really is no water in India and the way we grow crops is very unsustainable; it is very critically dependent on underground water which is going deeper and deeper; our rainfall pattern is entirely unpredictable because of the climate change and also very slight changes in temperature, say 2-3° Celsius leads to a decline in wheat and rice seeds. There are IPCC<sup>17</sup> studies, some of them I have put in my paper, so from the production side we haven't really grown from the 1980's and we are in a very climate constraint complicated world. However our needs are increasing because not only that the population is growing but we have a rich section of population is asking for more protein based foods. The more meat you consume, the more

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<sup>17</sup> <http://www.ipcc.ch/>

The Intergovernmental Panel on Climate Change (IPCC) is the international body for assessing the science related to climate change. The IPCC was set up in 1988 by the World Meteorological Organization (WMO) and United Nations Environment Programme (UNEP) to provide policymakers with regular assessments of the scientific basis of climate change, its impacts and future risks, and options for adaptation and mitigation.

grains will be required to produce one kilogram of chicken, so our needs are growing at a galloping speed but we are really not concerned about the sustainability aspect. Then it also affects your access because farmers' incomes are intrinsically linked, not only farmers income but people who are dependent on primary activities- be it fishing, gathering or working in other peoples' fields so climate change affects livelihood of all these people including urban poor. Their incomes and ability to respond to climate catastrophes also gets very badly affected, not only that but the absorption gets affected because food security is not just about eating and consuming food that is nutritious but it's about absorption also and to be able to absorb nutritious food other issues come in terms of water, sanitation and diseases so if climate change contribute to the disease burden then that also affects the ability of people to absorb food. So, in some sense I would say that the understanding of how climate change is important and how important food security is and how climate change affects food security is very limited in India. There's hardly any awareness even within people who work with agriculture so how climate affects food security. There is a National Action Plan on Climate Change<sup>18</sup> which looks at the impact of climate change on agriculture so they have been some initiatives but given the kind of crises we are living in right now, we really need much more than what we are doing.

**In areas like Assam and other tea plantations, they require colder climates to adapt to but plantations workers are facing an issue because plantations are not adapting to the current change in the global trend since 2-3 years. Are there any alternatives to such a situation because technologically they are possible but in terms of economic viability it's not feasible in India?**

We are trying to grow drought resistant and drier forms but you know for research to happen and for them that technology to get adopted and disseminated, it's a huge thing as there are multiple hurdles at every level. Particularly when you mentioned about coffee; though all crops are sensitive but coffee as a crop is very sensitive to even the slightest changes in temperature. When it comes to Assam and tea gardens, then they are suffering from a long time which is why the impact of climate change becomes much more severe in India because of the inherent vulnerability that we have so people are already poor, we have anyways many issues and then we have this another big issue of climate change, thus multiplying the shock which is why the impact is extensive. In Assam, the issue of flood is also very crucial and all these things are affected owing to climate change. Personally, I am disappointed at the policy level because it's

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<sup>18</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2822162/>

The National Action Plan on Climate Change (NAPCC) encompasses a range of measures that includes National Mission for Sustainable Agriculture: The NAPCC aims to support climate adaptation in agriculture through the development of climate-resilient crops, expansion of weather insurance mechanisms, and agricultural practices.

not taken seriously as it should be. We are looking for very quick fix solution in agriculture or food policy focusing more on the pricing and marketing areas and not thinking about the long term issue that is sustainability. Also, it is important to understand that India on its own cannot solve this issue, we need global action. At this time what we need is a domestic policy geared towards the crises that we are in we have to appreciate the problem at hand; we do not understand the huge impact of climate change on Indian agriculture and livelihoods of the rural people.

**As we spoke of the Millennium Development Goals<sup>19</sup> (MDG) and Sustainable Development Goals<sup>20</sup> (SDG), even though food security was an aspect of Millennium Development Goals, it somehow couldn't be achieved, how do you view these goals and its importance as of now?**

MDG's have had their success even when we discuss Africa, we usually say that there was a growth of number of hungry people in Africa in absolute terms but Africa is a huge continent, some countries in Africa did make effective improvements but the eastern part of Africa has a very serious issue and things may be worsening in those areas, largely because of climate and conflict so these issues remain. When it comes to India, I have nothing to share except disappointment because it's really a shame in terms of the way we have grown; the high growth rates that we have achieved, the position that we are in the global level as a large developing country with so much of influence, really our head should hang in shame and much of it is because of the policy apathy, we have very half-hearted attempts. We need a universal PDS; we need to take care of health and sanitation because it is linked and our desire to spend on welfare is contained to control our fiscal deficits. For India we need to spend more on welfare schemes.

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<sup>19</sup> <http://www.un.org/millenniumgoals/>

The eight Millennium Development Goals (MDGs) – which range from halving extreme poverty rates to halting the spread of HIV/AIDS and providing universal primary education, all by the target date of 2015 – form a blueprint agreed to by all the world's countries and all the world's leading development institutions. They have galvanized unprecedented efforts to meet the needs of the world's poorest. The UN is also working with governments, civil society and other partners to build on the momentum generated by the MDGs and carry on with an ambitious post-2015 development agenda.

<sup>20</sup> <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>

On 1 January 2016, the [17 Sustainable Development Goals \(SDGs\)](#) of the [2030 Agenda for Sustainable Development](#) – adopted by world leaders in September 2015 at an [historic UN Summit](#) – officially came into force. Over the next fifteen years, with these new Goals that universally apply to all, countries will mobilize efforts to end all forms of poverty, fight inequalities and tackle climate change, while ensuring that no one is left behind.

**How do you view the future of food security in India with the current trend in population and economic growth?**

The future is only as good as the present and the present is not good. In terms of growth it's a tough question because this growth is not a broad based growth, it is a growth in a few sectors that is pulling the growth. I also don't agree with the obsession of economic growth. In fact there is a huge literature on how unimportant the GDP growth is in terms of measuring progress, this report titled "*GDP A Poor Measure Of Growth*"<sup>vii</sup>, was written by Nobel prize-winning economists, Joseph E. Stiglitz<sup>21</sup> and Amartya Sen<sup>22</sup>, and they exposed how GDP growth confuse what is happening to a country and that is exactly what is happening to us .So , I am not obsessed with growth and it is immaterial whether it's 8% or 9% because it is led by growth in very few sectors which are not where most of the people are employed. Much of the people continue to be employed in the rural sector even if they are not directly engaged in the production of in crop production, there is a lot of rural nonfarm activities that people are engaged in. It is a jobless growth as people are surviving at a bare minimum. In fact it could be an immiserizing growth<sup>23</sup> where the growth itself is based on exploitation of resources and if one would take into account the degradation like a Green GDP<sup>24</sup> and you calculate then you might

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<sup>21</sup> [https://en.wikipedia.org/wiki/Joseph\\_Stiglitz](https://en.wikipedia.org/wiki/Joseph_Stiglitz)

Joseph Eugene Stiglitz ([/stiglitz/](#); born February 9, 1943) is an American economist and a professor at [Columbia University](#). He is a recipient of the [Nobel Memorial Prize in Economic Sciences](#) (2001) and the [John Bates Clark Medal](#)(1979). He is a former senior vice president and [chief economist](#) of the [World Bank](#) and is a former member and chairman of the (US president's) [Council of Economic Advisers](#)

<sup>22</sup> [https://en.wikipedia.org/wiki/Amartya\\_Sen](https://en.wikipedia.org/wiki/Amartya_Sen)

Amartya Sen is an [Indian](#) economist and philosopher, who since 1972 has taught and worked in India, the United Kingdom, and the United States. Sen has made contributions to [welfare economics](#), [social choice theory](#), [economic](#) and [social justice](#), economic theories of [famines](#), and indexes of the measure of well-being of citizens of developing countries. He is currently the [Thomas W. Lamont University Professor](#) at [Harvard University](#)<sup>[4]</sup> and member of faculty at [Harvard Law School](#). He was awarded the [Nobel Memorial Prize in Economic Sciences](#)<sup>[5]</sup> in 1998 and India's [Bharat Ratna](#) in 1999 for his work in welfare economics. In 2017, Sen was awarded the [Johan Skytte Prize in Political Science](#)<sup>[6]</sup> for most valuable contribution to Political Science.

<sup>23</sup> [https://en.wikipedia.org/wiki/Immiserizing\\_growth](https://en.wikipedia.org/wiki/Immiserizing_growth)

Immiserizing growth is a theoretical situation first proposed by Jagdish Bhagwati, in 1958,<sup>[1]</sup> where economic growth could result in a country being worse off than before the growth. If growth is heavily export biased it might lead to a fall in the terms of trade of the exporting country. In rare circumstances this fall in the terms of trade may be so large as to outweigh the gains from growth. If so, this situation would cause a country to be worse off after growth than before.

<sup>24</sup> [https://en.wikipedia.org/wiki/Green\\_gross\\_domestic\\_product](https://en.wikipedia.org/wiki/Green_gross_domestic_product)

The green gross domestic product (green GDP or GGDP) is an index of economic growth with the environmental consequences of that growth factored into a country's conventional GDP. Green GDP monetizes the loss of biodiversity, and accounts for costs caused by climate change.

see that you are actually not growing. It's going to be politically infeasible to do that kind of exercise and would lead only to disappointment. We need to contemplate on what this growth is and which sectors. In case of India, without even thinking of the development model that we have, madly pursuing growth is not going to help and not being able to have resources to sustain welfare schemes is an old argument based on economic beliefs that the state should have limited expenditure and fiscal deficit should be below this magic number. Our growth is neither a manufacturing led growth nor an agricultural led growth; it is a consumption; finance; real estate kind of growth. This growth is not generating decent sustainable jobs for people and if we were to go on like this then the population you mentioned will not be able to move out of the rural sector to a decent job in the urban sectors which is going to further impact their ability to get a decent basic income to sustain themselves.

## **INFERENCE**

Growing up in a country like India, I have seen the sheer effects of poverty in Delhi. In 2014, I had travelled to Kotabagh-a remote village in Nainital. There, my whole notion about poverty had changed. I saw people in that village share their experiences about shortage of food even when the slightest of climate fluctuations take place. It invoked my interest in the food issues pertaining to India that is ironically an agrarian country. I thus thought of delving into climate and food security issue through a dialogue with experts in this field. On one hand, India is one of the fastest growing economies<sup>25</sup> (7.2% FY 2017) but such high economic growth has not translated to a significant decline in undernourishment. I got the opportunity to have a discussion with Ms. Malan Cha Chakrabarty to be able to get a pragmatic insight of the issue of poverty and hunger in light of India's policy on food security

Food security is the state of having reliable access to a sufficient quantity of affordable, nutritious food. In the context of India there are a few issues that hamper this access to the masses:-

- 1) Legal restrictions in the WTO
- 2) Extreme climate fluctuations
- 3) Extreme poverty
- 4) Irregular public distributions systems

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<sup>25</sup> <https://openknowledge.worldbank.org/bitstream/handle/10986/26800/9781464810244.pdf?sequence=14&isAllowed=y>

India's growth is forecast to increase to 7.2 percent in FY2017 (April 1, 2017 - March 31, 2018) and accelerate to 7.7 percent by the end of the forecast horizon—slightly below previous projections. This outlook mainly reflects a more protracted recovery in private investment than previously envisaged.

5) Ignorance towards the dependency of agriculture on climate

Majority of rural population survive on agriculture and related primary activities that form their source of income. Political and economic reasons have curbed the Centre to continue welfare schemes that sustained this strata of society, variations in temperature are posing another threat to the sustainability of crops and thus of people involved in these activities.

There is a need for the diversification of crop, low-cost technology solutions, building capacity, and providing improved seeds and agricultural machinery especially for a country like India that has so many livelihoods dependent on agricultural activities. Also, the Public Distribution System that needs to be addressed with top priority. Efficient systems can curb the threat of conditions like hunger, drought and malnutrition and thus save millions of lives.

Slight turbulences in climate affect a large part of population. For e.g. in Assam even if the climate is plus minus one degree Celsius, the whole tea plantation comes to a standstill and is severely affected. These domestic issues lead to complexities within the food circulation system in India. Developing climate smart agricultural practices should be the focus of finding solutions for the ongoing climate variations.

According to Intergovernmental Panel on Climate Change (IPCC) forecasts, the earth is likely to warm by 30 C during this century<sup>26</sup>. India may lose almost a fourth of its flora and fauna by 2030. It is observed that there will be an increase in the frequency of heavy rainfall events in South and Southeast Asia due to doubling in CO<sub>2</sub> concentrations in the atmosphere. All these climatic changes have to be incorporated for long term sustainability of food and the people who are growing it. For this global dialogues on food and security need to be initiated at a rapid pace

At a broader level, with the deteriorating food structures in the African continent, debates are going on in the international agenda how to improve the food chain supply and structure in countries affected by food crisis. However, a lot of countries have domestic legal barriers that restrict them to participate in such a trade and thus it has led to a situation where food security hasn't really found any momentum in the United Nations itself. The need of the hour is to focus on this agenda as a critical one in the UN considering millions die due to malnutrition due to lack of accessibility to food.

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<sup>26</sup> [www.jerad.org/ppapers/dnload.php?vl=4&is=4&st=1017](http://www.jerad.org/ppapers/dnload.php?vl=4&is=4&st=1017)



**In conversation with:**  
**Dr. Rajeswari Pillai Rajagopalan**  
Senior Fellow and Head  
Nuclear & Space Policy Initiative  
Observer Research Foundation



**What are your views in the nuclear capacities of countries in the world as of now?**

Two countries are the fragile regions – one is Iran situation particularly in the Middle East are the West Asia given the political instability and security vulnerabilities and Iran developing nuclear weapons though the Joint Comprehensive Plan of Action (JCPOA)<sup>27</sup> has put a temporary halt to Iranian nuclear program but I don't think it is a long lasting one. Back in 1994 we had a similar deal the USA has done with the North Korea<sup>viii</sup> and it took another decade before the North Koreans went nuclear but in the case of Iran it isn't even a decade we need to wait for, much before Iran is going to go nuclear and weaponize their capabilities.

The second area is of course the Korean Peninsula and North Korean Nuclear Program that they have been carrying out. This also is a politically unstable and fragile region and there are a lot of regional anxieties due to rise of China and its military, economic, political and strategic capabilities that Chinese are developing; on top it we have North Korea Nuclear Programme and their regime sending out threats against the South Koreans, Japanese and the Americans at this point of time; an unstable leadership in the White House that doesn't help at all. Trump's policy and articulation hasn't been so far presidential, there is inconsistency in his policy statement as one day he says Kim Jong-un is a strong leader I will go and talk to him, the next day he says U.S. is totally prepared for a "devastating" military option against North Korea<sup>28</sup>. In Trump's view, he doesn't want to send a clear signal on how US is going to respond towards North Korea ,so comes out with multiple contrasting viewpoints on how they want to respond to the nuclear situation so that the North Korean regime isn't prepared on how US view their policy. This may not go as per the plan though it makes sense in a way to see how North Koreans and Japanese are going to respond, but it may work out dangerous especially in case of North Korea where you don't have a rational actor to control the nuclear button. North Korea deals with the most critical while Iran offers a more stable scenario with stable dynamics as it plays out right now, though they need to be watched out but the Nuclear Non Proliferation Treaty<sup>29</sup> is a threat but their case is not as serious as North Korea.

**The universal legal treaty called the NPT or the Nuclear Non-Proliferation treaty is binding in nature on many countries but binding doesn't mean some countries adhere to it. In the past, Iran repeatedly violated the NPT and manufactured weapons under clandestine networks. How do you view this and do you think more efficient ways can be introduced in future to avert repeated breaches?**

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<sup>27</sup> <https://fas.org/sgp/crs/nuke/R43333.pdf>

<sup>28</sup> <https://www.thestar.com/news/world/2017/09/26/whats-up-with-trump-confused-north-korea-is-reaching-out-to-republican-analysts-for-answers.html>

<sup>29</sup> <http://www.un.org/en/conf/npt/2005/npttreaty.html>

In the past NPT has come under serious challenges, one the first time it came under challenge was in the late 1980's when suspected of Iraqis pursuing nuclear weapon program and questions arose how to tighten the process because at the end of the day, countries seeking the civil nuclear technology should not be transferring it to a weapons program and that's how essential safeguards came out. One of the biggest crises in the nuclear non-proliferation regimes is the crises in decision making; lack of consensus among the big powers with US on one side and Russia and China have been the biggest stumbling blocks in strengthening the nuclear non-proliferation including the NPT. After North Korea walked out of the treaty, they were part of the members of the treaty, signatory to the treaty but conducted a nuclear test in 2006. From that time onwards they have been discussions how to close that loophole where you just can't sign out of the treaty and conduct a nuclear test, but there has been no consensus among the major powers. In the last decade or so this problem has become really huge because of the lack of consensus; one cannot devise proper solutions to mitigate that problem. I don't see the problem going in the near future. Crises of major powers not coming to a joint decision will continue firstly because there is a global power transition- the US continues to be the biggest power and no one has come to challenge their power but even so there has been a relative decline of US power, let me say US can't do a Iraq in Iran anymore. Even though militarily US is unmatched followed by Russia and China but even so US relative decline in its dynamics in how it's able to enforce various things in various parts of the world, secondly Russia has serious problems confronting its national security—one is the demographic crises it faces as they don't even have enough manpower to man secure its borders, they have serious concern even about China even though there is a tactical arrangement between the two countries because Russians are still concerned about the growing military power around its neighbourhood especially seeing their weakness in governmental military front, Russians has pit a huge focus a lot on the development of nuclear weapons so the role of nuclear weapons has only magnified under the scenario where there is the weakening of governmental military power. So, the Russians are not going to give up nuclear weapons. China is caught up in Asian power transition as two or three powers are rising concurrently in Asia- rise of India is a power transition even though we are 2-3 generations behind China in economic, political and military power but still we are a rising power. China has come up in a big way in last two decade and a half. Rise of Japan as a nation introduces power dynamics in Asia Pacific. With the rising power comes the whole phenomenon of amassing huge amount of military power including nuclear capabilities, higher technology. I don't see any role of nuclear weapons diminishing so the other question is if NPT is going to continue in this fashion, how do we actually stabilize NPT? NPT has challenges but at the same time how do we stabilize the regions especially the Korean peninsula and middle east if we can enforce a nuclear weapon free zone. At the last NPT review conference, we had major disagreement among countries about the nuclear weapon free zone in the middle east as per as the whole agenda of

global nuclear disarmament, there were no major agreement between the major powers on nuclear disarmament. India has been a champion in global nuclear disarmament. In 1988 Rajiv Gandhi put out an initiative and since then we have gone nuclear and even we have gone nuclear, we still continue to champion the cause of nuclear disarmament. Should there be globally agreed time table, most recently we had the Nuclear Ban Treaty<sup>ix</sup> that came about, none of the major powers agreed to sign it. So global nuclear disarmament remains an idealistic notion, but in terms of pragmatic agreement, it will not reach in near future till in Asia- Pacific and globally, the power churning finishes, I don't think any country would give in their nuclear power capabilities. Now, under that scenario, we have to see what are the stabilizing measures- whether it is taking up confidence building measures among various countries or you can think of non-attacking nuclear weapons states that is something we can think about. In fact India-Pakistan nuclear Confidence Building Measures (CBM) have been successful despite all other political crises. On January 1<sup>st</sup> of every year, we exchange the list of nuclear facilities and we agree to have a normal tack on how to reduce conflict. We should think on possibly more CBM's as well as strengthening of NPT measures as at this point of time, we lack the initiative from great powers.

**The United Nations gives certain countries the permission to develop nuclear weapons under the legal provisions of the Nuclear Non Proliferation Treaty. Do you agree to such a special provision being given to the permanent 5 countries is justified or can it create a nuclear crisis and why?**

Firstly, when NPT was being formulated, India worked with other countries in a very active fashion to bring about the nuclear non-proliferation treaty but finally when the text was produced it was against the interest of India and we decided to stay out of it. It is such an artificial deadline to say that such and such date is the cut-off date and beyond this date no country will make nuclear weapon, in this sense you are building a kind of perennial between nuclear weapon states and nuclear non weapon states. This is the reason India would never agree on signing the NPT.

Secondly, everybody is looking at the demand side of nuclear weapons as to why countries achieve such nuclear capabilities or why there is a demand of nuclear, but nobody looks at the supply side of nuclear weapons. Another aspect is if nuclear weapons are seen as legitimate weapons in somebody's capacity and over capability, it cannot be denied to some other person. The moral justification to any country that it lacks the moral superiority to tell the other country that these weapons are not good for you and thus dissuading them to develop nuclear weapons – you don't have the moral responsibility to say that. Unless you have the capacity to say with a credible voice you cannot push the agenda in an effective manner. In my view, as long as it is legitimate to one state, it's going to be legitimate to other states as well and you can't push down

the agenda in anyone's throat with force .Countries like Iran and North Korea are hard proliferation cases including Pakistan to some extent and may be India you can say. Despite all the sanction following the peaceful nuclear explosion (PNE) in 1974<sup>x</sup>, we decided to develop the capabilities indigenously; investing lot of time, effort and money in developing these capabilities but the interesting fact about India's development of nuclear capabilities is that we stopped the program many times as we were not keen on developing India's nuclear weapon capability. We did the technology demonstration during the PNE in 1974. Since then we saw and monitored the developments particularly in the China-Pakistan context and in the manner, the Chinese is web transferring nuclear weapon technology, weapon knowhow, the blue print was given to the Pakistanis, the delivery mechanisms- the long, short and medium range missiles being supplied to the Pakistanis. In fact the first nuclear test was done by the Chinese. These things are well documented now. This is what finally pushed India to go over to nuclear and therefore we did what we had to do in order to develop our own nuclear capabilities. When Pakistan was developing its nuclear capabilities, the US was well in the knowhow. They knew that this was what was going on, but US had a different viewpoint at that time because their national security objective was to win the cold war for which they sought Pakistan's help in winning the war against Afghanistan and therefore they decided to overlook what was going on between Pakistan and China. As long as weapons remain legitimate to somebody, it will remain a problem.

**The United Nations has this system to sanction countries for breaching or violating any legal norm, but in a case where a country like the Russian Federation breaches, who is there to sanction it considering its nuclear arsenal and capacity and well established status of a superpower?**

One is the loophole in the mechanism; how do you go about imposing sanctions but when you talk of sanctions you got to look into the cases (forget about the people walking out of the treaty and conducting tests) the number of repeated nuclear tests by North Korea, what has been the response like- China continues to shield North Korea to a large extent. Tough sanction that should be imposed on North Korea but it's not being done, because China continues to retain the largest number of leverage vis-à-vis North Korea because they remain politically and morally supportive of the regime in addition to economic transactions (nobody else is doing any economic transactions) because only China and Russia are doing economic transactions but none of the other countries. From last two years, economic transactions with South Korea are also stalled. Until, you don't bring Russia and China to do the needful. In my view the more important problem is not states walking out of treaty and imposing tough sanctions on states is realistically not feasible, but how to deal with the belligerent regime like North Korea who are repeatedly doing nuclear tests one after another. Because if we can't deal with North Korea in an effective manner, there is no way that you are going to be solving the issue. Sanctions have

proved to be have a limited impact, but China has not been wholly behind international sanctions because their own worry is if they push the North Korean regime beyond a point the regime will collapse, one if the regime collapse, then there will be a huge refugee influx in China, second they will have South Korean and American forces right under Chinese border; both of which they want to avoid. Chinese want to shield the regime to some extent so that it doesn't collapse, at the same time, in the longer run; it is not a regional stability. China doesn't understand this and looks at the issue with a very narrow and short sighted approach, which is why things are not going to change this point of time.

**In January 2004, the Pakistani government summoned Khan for a debriefing on his active role in nuclear weapons technology proliferation in other countries after the United States provided evidence of it to the Pakistanis. Khan formally admitted his responsibility for these activities a month later. Even though Pakistan denied its involvement but A.Q. Khan did export technology to terrorist organisations. What are your views on such a critical issue and its probability in the future?**

I think us staying out of NPT wasn't because of Pakistan, it was because of the manner the treaty developed, and when we saw the text, we believed that it was not the text we agreed to, so we decided to opt out of the NPT. It is because India decided not to be a part of the NPT, Pakistan too backed out. Pakistan doesn't have its independent policy when it comes to nuclear and security issues; they will follow our lead message so if we sign the NPT, tomorrow they will sign it too. The rationale for Pakistan not to sign the NPT is because India didn't sign it. India's signing or not signing the NPT has nothing to do with how Pakistan postures itself because this happened in a very different time altogether. Having said that we have been very concerned about the A.Q. Khan's linkages and A.Q. Khan's transfer of nuclear material technology to North Korea, Iran, and Libya is extremely concerning to India. But we never made it a big issue in our MEA policy framework, we have never made linkage of - one A.Q. Khan, second - we haven't made a huge deal about China's transfer of nuclear technology and missile delivery mechanism have actually changed the strategic balance in East Asia and South East Asia. Only recently, we have begun talking about for instance North Koreans have recently conducted a hydrogen bomb in September<sup>30</sup> and now we talk about how they could be possible collaboration between North Korea and Pakistan under the blessings of Chinese leadership. We are now slowly able to bring those linkages as part of our policy formation but not something that figured extensively in our calculations.

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<sup>30</sup> <https://www.cnbc.com/2017/09/03/north-korea-claims-successful-hydrogen-bomb-test.html>

**How do you think India should shape its nuclear policy in the future? Should it sign the NPT or formulate more policies considering its current negative relations with China and Pakistan?**

We are willing to sign the NPT provided the NPT is unlimited and we can sign as a nuclear weapon state. We are never going to sign NPT as a non-nuclear weapon state. Today, especially after the US-India nuclear deal<sup>xi</sup> and the Nuclear Supplier Group waiver, what we have in place is a de facto recognition of India as a nuclear weapon state. We may not be a nuclear weapon state, we may not be nuclear weapon state that quote unquote under the NPT classic condition but even so NSG waiver 2008<sup>xii</sup> and US-India Nuclear Deal essentially has gone on to recognize India as responsible nuclear weapon state and it is India clean track record of not proliferating to other countries and despite opposite to do so in late 1980's Iraq had approached India asking for nuclear power and technology knowhow but we have despite staying out of the NPT, despite not being an NSG member, we have adhered the non-proliferation rules so much better than countries that have signed onto the treaties. NPT has been signed by China but they have violated every single commitment of the treaty. They became NSG member even then they went on to transfer nuclear power reactors to Pakistan. In 2008, they gave two nuclear reactors to Pakistan- *Chashma 3 & 4*<sup>31</sup> and at that time they came up with a justification saying this is part of old agreement – the grandfather clause. But in 2011, they passed on two more- **Karachi 1 and 2**<sup>32</sup>. They did not even feel the need to justify or offer an explanation to other countries as to why they are doing because China had to come back much more powerful and they felt that nobody can question us and big powers couldn't do anything about it. So they are still gaps at a time when there is a lot of power transition both in Asia and across the globe. It is going to be extremely difficult to bring in consensus from the major powers to decide on something or tighten measures – Ban Treaty is the best example you have which is supported by a good number of countries but the fact is that you don't have those critical actors signed on to it. You need a critical number of countries signing out a new instrument otherwise it will be a completely toothless piece of paper. It's not going to be affective at all. I don't see things changing in the near future even in Asia-Pacific when you look at the kind of developments are taking place in the strategic security domain, NPT is not hopeful. It's unfortunate feature but the unfortunate feature is that Asia is going to be very competitive, rivalry stricken region but there is dilemma in North Korea and China's own rise in an aggressive manner especially when they are pursuing South China and East China's issue. Asia is going to remain a serious vulnerable spot for some time and nuclear weapons are not going to go away in the future.

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31 <https://www.dawn.com/news/1304960>

32 [https://en.wikipedia.org/wiki/Nuclear\\_power\\_in\\_Pakistan](https://en.wikipedia.org/wiki/Nuclear_power_in_Pakistan)

## INFERENCE

My talk with Dr Rajeswari started with the fundamentals of nuclear policy. Nuclear weapons stand one of the key components in this modern 21st century to determine each nation's capacity in the global context. With continuous developments in such a sensitive field like this, a lot of uncertainties loom in this context especially with unstable governments like North Korea and Iran, the question of nuclear security comes into context.

Nuclear Weapons are found in many forms in different delivery mechanism however, one treaty forms the apex of all legal norms in this very field: Nuclear Non Proliferation Treaty (NPT). This treaty has its influence on all signatories but under the Vienna Convention<sup>33</sup> also applies to all countries pertaining to the very principle of "good faith". Nevertheless, the very mechanism under which the NPT functions stands flawed due to the very subjectivity such a complicated topic has. How a claimed intention of peaceful purpose can mean detonating a nuclear explosive in a country as proposed by the Ayatollah of Iran<sup>34</sup> with respect to Israel or a word like nuclear weapons and its very definition can be misinterpreted by countries in their domestic interest. Nuclear Weapons is a topic that not only questions the foreign ambitions of countries but also poses a challenge to the domestic ambitions.

As we went on discussing the agreed framework and its implications in the Korean Peninsula to the repeated violations of the NPT by Iran, a lot of new legal norms kept coming up. One of which we studied was the JCPOA and Iran's partial compliance with it. These legal norms go on to establish that such global security measures undertaken reasonably by state governments can curb the threat and positively affect diplomatic relations at a multilateral level.

The topic most critical to the Indian government is the illicit nuclear networks of Pakistan as we saw in 2003 in the case of the Abdul Qadeer Khan<sup>35</sup> network and the PSI initiative<sup>36</sup> undertaken

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<sup>33</sup> [https://en.wikipedia.org/wiki/Vienna\\_Convention\\_on\\_the\\_Law\\_of\\_Treaties](https://en.wikipedia.org/wiki/Vienna_Convention_on_the_Law_of_Treaties)

The Vienna Convention on the Law of Treaties (VCLT) is a treaty concerning the international law on treaties between states. It was adopted on 23 May 1969 and opened for signature on 23 May 1969. The Convention entered into force on 27 January 1980. The VCLT has been ratified by 115 states as of November 2017. Some countries that have not ratified the Convention, such as the United States, recognize parts of it as a restatement of customary law and binding upon them as such.

<sup>34</sup> [https://en.wikipedia.org/wiki/Supreme\\_Leader\\_of\\_Iran](https://en.wikipedia.org/wiki/Supreme_Leader_of_Iran)

Ali Khamenei is the head of state and highest ranking political and religious authority in the Islamic Republic of Iran. The armed forces, judicial system, state television, and other key governmental organizations are under the control of the Supreme Leader of Iran.

<sup>35</sup> [https://en.wikipedia.org/wiki/Abdul\\_Qadeer\\_Khan](https://en.wikipedia.org/wiki/Abdul_Qadeer_Khan)

A. Q. Khan, is a Pakistani nuclear physicist and a metallurgical engineer, who founded the uranium enrichment program for Pakistan's atomic bomb project. In January 2004, the Pakistani government summoned Khan for a debriefing on his active role in nuclear weapons technology proliferation in

by the US government. If any such future networks do get established especially seeing the rising wave of terror in Pakistan and the free movement terrorism have in Pakistan, a lot of critical issues come into existence.

I see nuclear weapons as of now something that can only incite a World War 3 without any government interference and hence nuclear security is one of the most important aspects along with nuclear safety. We see in the case of the Russian Federation what the Chernobyl Plant<sup>37</sup> did to the civilians. I see nuclear security and nuclear non-proliferation as the two most important to contain the threat to terrorism in the modern 21st century.

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other countries after the United States provided evidence of it to the Pakistanis. Khan formally admitted his responsibility for these activities a month later.

<sup>36</sup> [https://en.wikipedia.org/wiki/Proliferation\\_Security\\_Initiative](https://en.wikipedia.org/wiki/Proliferation_Security_Initiative)

The Proliferation Security Initiative (PSI) is a global effort that aims to stop trafficking of weapons of mass destruction (WMD), their delivery systems, and related materials to and from states and non-state actors of proliferation concern. Launched by United States President George W. Bush in May 2003 at a meeting in Kraków, Poland, the PSI has now grown to include the endorsement of 105 nations around the world, including Russia, Canada, the United Kingdom, Australia, France, Germany, Italy, Argentina, Japan, the Netherlands, Poland, Singapore, New Zealand, Republic of Korea and Norway. Despite the support of over half of the Members of the United Nations, a number of countries have expressed opposition to the initiative, including India, China and Indonesia.

<sup>37</sup> <http://www.world-nuclear.org/information-library/safety-and-security/safety-of-plants/chernobyl-accident.aspx>

The April 1986 disaster at the Chernobyl nuclear power plant in Ukraine was the product of a flawed Soviet reactor design coupled with serious mistakes made by the plant operators. It was a direct consequence of Cold War isolation and the resulting lack of any safety culture.





**In conversation with:**  
Mr. Subimal Bhattacharjee  
Independent Consultant  
Defence and Cyber Issues

### **What is Cyber Space?**

Cyberspace, which in common parlance refers to the virtual community space facilitated mainly by the medium of the internet, has been evolving and at a great pace. The internet has revolutionized communication and information gathering and has also made possible commerce through the virtual medium, commonly called e-commerce. Today digital lifestyles are becoming common in every community across the globe and a cybercitizen is actively involved in communications via social media and business and trade via ecommerce. Nations have also started using the medium of cyberspace to redefine governance and improve efficiency. While cyberspace and technology has been an enabler, it has also somewhat become abused in many forms. Steadily abuse of the medium has grown and today, apart from societal concerns, there has been a rise of criminal activities. In no time common forms of cyber-attacks have matured and are more sought after by criminals, and are also becoming terrorist tools. They are also being seen more actively as tools for cyber warfare programs for many states and non-state actors. Thus in a short time we are confronted with issues to deal with – both for protecting the free nature of the medium with all its advantages and also for not becoming an easy victim with our growing dependency on cyberspace.

### **What is India's domestic policy to cybersecurity?**

In India, the menace of cyber-attacks has been understood at various levels due to the growing awareness surrounding the incidents that have occurred. However, we still do not have a comprehensive national cybersecurity strategy that encompasses a broad approach of the usage of the national cyberspace. As a result, we still have not drafted a cyber- security policy that would be similar to the Critical information infrastructures protection (CIIP)<sup>38</sup> in other countries. The growing impact of cyber- attacks on national security is yet to be realized. Particularly for India, which is high on the radar of terrorists who strike repeatedly in different places across the country, cybersecurity should be an integral part of the national security initiatives. The recent blasts in Delhi (September 2008), Ahmedabad and Bangalore (August 2008), Jaipur (May 2008), the blasts in Varanasi (March 2006), Hyderabad (August 2007), and the serial blasts in UP (November 2007) all have trails that lead to some activity in cyberspace. Particularly, the terror emails sent before the blasts in Delhi and Ahmedabad speak of the meticulous planning and the suave usage of cyberspace by the terrorists where it would be almost impossible to nab the senders of those emails. Even the attack on Parliament in December 2001 had a cyber-angle to it. Needless to say, the time has come when national security considerations have to address the dimensions of possibilities through cyberspace.

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<sup>38</sup> <http://www.oecd.org/sti/ieconomy/ciip.htm>

A proactive policy should be undertaken to orient and improve the cyber skills of policemen. There is a need to properly assess if policemen should be trained directly for handling cyber incidents or if the law enforcement should outsource cybersecurity-related investigations to some dedicated cyber experts from the private sectors who are specialists in the field. Globally, the law enforcement and the private sector security companies work successfully in close tandem in this regard. At the same time, the investigation forces need to be oriented to the latest technology. The Central Bureau of Investigation (CBI) has been active in this field but it has to sufficiently increase its resources for the purpose. The central government should fund programs for state police modernization on the cybersecurity front and should offer incentives to be provided to the policemen who take an interest in network-related activities. Even the police stations have to be revamped, with better computers and bandwidth, and a mission mode approach has to be fostered to digitally connect all the police stations in the form of a national law enforcement network. At the same time, the legal fraternity needs to tone up their understanding of technology and the intricacies of cyber-attacks. Both the legal profession and the judiciary have to be more rapidly oriented to the changing nature of cyberspace. On a national scale, training and awareness programs have to be started for these communities.

### **Can you elaborate on the cyber legislations of India?**

On the cyber legislation front, India was one of the first countries to specifically enact a law for information technology-related issues in October 2000 called the Information Technology Act 2000 (IT Act)<sup>39</sup>. The IT Act allowed the introduction of e-commerce and digital signatures and addressed a few of the cyber-crimes. However, in the last eight years of the usage of the IT Act, many deficiencies have been observed and also newer technological feats needed to be covered. Amendments have been drafted with changes to the offences and contraventions, and sent to the Parliamentary Standing Committee on IT for their remarks. The Standing Committee has also significantly made the recommendation to the government to define cyber terrorism and make punishment harsh for such acts. The amendments are now awaiting parliament's approval. However, doubt still remains about whether the revised IT Act will be able to address the cybersecurity issues that have a national security dimension. In 2009, the IT Act was amended further and newer and specific provisions were added to address newer forms of cyber-attacks

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<sup>39</sup> <http://www.cyberlawsindia.net/Information-technology-act-of-india.html>

In May 2000, both the houses of the Indian Parliament passed the Information Technology Bill. The Bill received the assent of the President in August 2000 and came to be known as the Information Technology Act, 2000. Cyber laws are contained in the IT Act, 2000. This Act aims to provide the legal infrastructure for e-commerce in India. And the cyber laws have a major impact for e-businesses and the new economy in India.

and possibilities. With the spread of the social media and concerns around privacy, more policy level interventions are being made.

### **What are the fears and concerns of cyberspace?**

Today, we can broadly enlist three negative Cs to cyberspace cyber-crimes, cyber terrorism, and cyber warfare. These negative elements have the potential to disrupt and destroy the medium. One of the common forms of attacks being undertaken is the planting of malwares, which commonly refers to all forms of software codes like malicious viruses, worms, and Trojan horses. These malwares are evolving to diffuse faster and wider and disrupt systems. However, Trojan horses are damaging and are actually able to pass on sensitive information to rogue networks as part of the Botnet Structure<sup>40</sup>. Then there are the Distributed Denial of Service (DDOS) attacks whereby a large number of computers are used to launch attacks on pre-determined computers or networks for a pre-determined period. Computers that participate in DDOS attacks could be from across the world and could also be the infected computers through the botnet network. The attacks on Estonian networks from Russia-based networks in May 2007<sup>41</sup> are to date the biggest DDOS attacks. Hacking, which refers to the unauthorized access to networks, is becoming more pronounced and one of the common forms of this vandalism.

### **What is cyber espionage and what are your views on it pertaining to India's interests considering developments in China?**

Today cyber espionage, which refers to the practice of obtaining sensitive, proprietary, or classified information from individuals, business competitors, governments, and enemies for military, political, or economic advantage using illegal exploitation methods on the internet, networks, software, and/or computers, is growing. There have been global fears expressed by

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<sup>40</sup> <https://en.wikipedia.org/wiki/Botnet>

A **botnet** is a number of [Internet](#)-connected devices, each of which is running one or more [bots](#). Botnets can be used to perform [distributed denial-of-service attack](#) (DDOS attack), steal data, send spam, and allow the attacker access to the device and its connection. The owner can control the botnet using command and control (C&C) software. The word "botnet" is a combination of the words "[robot](#)" and "[network](#)". The term is usually used with a negative or malicious connotation.

<sup>41</sup> [https://en.wikipedia.org/wiki/2007\\_cyberattacks\\_on\\_Estonia](https://en.wikipedia.org/wiki/2007_cyberattacks_on_Estonia)

A series of cyber-attacks began 27 April 2007 that swamped websites of Estonian organizations, including Estonian parliament, banks, ministries, newspapers and broadcasters, amid the country's disagreement with Russia about the relocation of the Bronze Soldier of Tallinn, an elaborate Soviet-era grave marker, as well as war graves in Tallinn. Most of the attacks that had any influence on the general public were distributed denial of service type attacks ranging from single individuals using various methods like ping floods to expensive rentals of botnets usually used for spam distribution. Spamming of bigger news portals commentaries and defacements including that of the Estonian Reform Party website also occurred.

many nations about the Chinese cyber espionage programs. Similarly, instances of corporate cyber espionage are growing by the day. There are syndicates today with major forays into cyber-crimes so as to target financial and strategic institutions. In the US presidential elections in 2016, cyber efforts from Russia have been mentioned and investigations are on to identify the whole game plan.

All digital systems are vulnerable, however, and the risks are real: cyber-attacks could be used to steal sensitive information about nuclear weapons, interrupt critical communications, manipulate warning systems or undermine confidence in nuclear deterrent forces—ultimately increasing nuclear risks. How do you interpret this notion of cybersecurity when it comes to terrorism?

Usage of cyberspace by terrorists and cyber terrorism that could cause catastrophic damages is of global concern. The latter refers to the destruction of critical infrastructures using cyber-attacks. Terrorists have found cyberspace to be a very safe mode for communicating with each other via false emails, chat rooms, and steganography<sup>xiii</sup>, spreading their propaganda, collecting funds from sympathizers, and also recruiting cadres. All these activities have grown over the years and there are open references to this effect by various terrorist groups, including Al Qaida<sup>xiv</sup>. Even emails are sent to inform of their specific incident execution in the physical world. But this is not all. Many of the terrorist groups and even states are also involving various hacking groups to launch attacks to cause damages and also disrupt networks. The other disturbing trend is the coordinated actions of various groups and tools for targeting unsuspecting citizens. One classic such situation is where spam emails surrounding major global events like the Olympics held in Beijing (2008) are actually propagating worms and Trojans<sup>42</sup>. Similar emails were sent around the tsunami incident.

### **Can cyberspace be used as a tool of foreign policy and warfare?**

Cyberspace is also becoming a major forum for diplomatic engagement and already cyber issues find place in the major summits of world leaders and bilateral engagements. India recently also hosted the 5<sup>th</sup> edition of Global Conference on Cyberspace (GCCS) where various stakeholders engaged in deliberations on the issues of cyberspace and the future. Also the fear of balkanization, catastrophic cyber-attacks and cyber warfare is increasing. The usage of cyberspace to launch attacks against adversaries' networks is being seriously seen as a war tool of the future. While the tools for such warfare would remain the same, it would have a major impact on the functioning of critical infrastructures and could bring serious disruptions and cascading effects in the networks of the attacked. Today, cyber espionage and probing attempts

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<sup>42</sup> <https://economictimes.indiatimes.com/tech/internet/trojan-plays-anti-china-games-for-hacking/articleshow/3154638.cms>

and exercises have increased rapidly and these exercises could be considered as part of a low-scale cyber warfare activity. However, the bigger fears are of the digital battlefield space where major conflicts could actually be fought in cyberspace, and the sheer ease with which more disruptions and destructions can be attained with less physical harm to the players and the absence of geographical barriers.

### **How do you view the future of cybersecurity in India?**

The road map is quite clear – understanding the importance of cybersecurity has to be on the top of the national agenda for security. Not only does the growing expertise of terrorists guide us in this direction, but also we need to remember the fact that as more and more of the country gets computerized and moves towards e-governance and e-commerce, there will be more and more vulnerabilities added to the system. The impact of digital consolidation should not be affected by the poor readiness to address the concomitant issues of protection of the medium of cyberspace. There have to be marked investments in setting up robust technical infrastructures that run our critical national infrastructures, and also upgrading them on a regular basis. India's global image as an Information and communications technology (ICT) behemoth also should titillate our national leadership to show a responsible leadership to the global community about how we protect and run our cyber infrastructure. India should also take a major leadership role in fostering a global cybersecurity legal cooperation. India's focus on the activities of the UN Secretary General-appointed Internet Governance Forum is a positive move and the meeting in India this year should give a direction to foster global cooperation on the cybersecurity front.

### **INFERENCE**

At the Yale Young Global Scholars Program, I attended my first lecture conducted by respected Professor Ted Weinstein. *He introduced the class of the concept of cyber space and security. Being a student unfamiliar with the concepts of computer science, cyberspace and its role in the policy making never became a topic of deliberation for me until this insightful lecture. I deduced the growing indispensability of cybersecurity at a global level.*

*Cybersecurity has become a national policy priority and is becoming integrated and comprehensive in economic, social, educational, legal, law-enforcement, technical, diplomatic, military and intelligence-related aspects. Cybersecurity strategies recognize that the economy, society and governments now rely on the internet for many essential functions and that cyber threats have been increasing and evolving at a fast pace. They are still initiated by criminal actors but also come from new sources, such as foreign states and political groups, and may have other motivations than money making, such as some types of destabilization (Estonia in 2007), cyber espionage, sabotage (e.g. Stuxnet), steganography and even military operations. Malicious actors*

are better organized, in particular to conceal their tracks. Till today we don't know who wrote Stuxnet. We don't know why. We don't know what the target is, or if Stuxnet reached it. But you can see why there is so much speculation that it was created by a government.

India recently drafted its first National cybersecurity Policy in 2013 but according to Sir Subimal, our policy is not akin to the Critical Information Infrastructures Protection (CIIP) in other countries. An official assessment<sup>43</sup> declares that:-

- (1) The declared cybersecurity policy has proved to be a paper work alone with no actual implementation till date.
- (2) The cybersecurity trends and developments in India 2013 (PDF) have listed the shortcomings of Indian cybersecurity policy in general and Indian cybersecurity initiatives in particular.
- (3) Indian cybersecurity policy has failed to protect civil liberties of Indians including privacy rights.
- (4) Civil liberties protection in cyberspace has been blatantly ignored by Indian government and e-surveillance projects have been kept intact by the Narendra Modi government.
- (5) The offensive and defensive cybersecurity capabilities of India are still missing.
- (6) India is considered to be a sitting duck in cyberspace and cybersecurity field and the proposed cybersecurity policy has failed to change this position

Seconding with Sir Subimal opinion on the need to improve the cyber skills of policemen and thus build smart police in India. A disgraceful and disappointing fact that I would like to share with my readers is that according to statistics -the annual spending on police forces in the country, out of the total police expenditure of Rs. 74257.66 crores during 2014-15, a mere 1.46% amounting to Rs.1086.11of the total police expenditure was spent on training<sup>44</sup>. Technological scaling up; boosting infrastructure and capacity of the police forces; improvement in recruitment as well as better training skills to handle cyber incidents are issues that need to be worked upon by the government. Also corporate cyber espionage that is growing rapidly needs to be contained as a priority.

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<sup>43</sup> <http://perry4law.org/cecsrdi/?p=1128>

Analysis Of National cybersecurity Policy Of India 2013 (NCSP-2013) And Indian cybersecurity Infrastructure by [Perry4Law Organisation](#) and [Perry4Law's Techno Legal Base \(PTLB\)](#)

<sup>44</sup> [http://niti.gov.in/writereaddata/files/document\\_publication/Strengthening-Police-Force.pdf](http://niti.gov.in/writereaddata/files/document_publication/Strengthening-Police-Force.pdf)

According to cybersecurity analysts, the IT ACT 2000 needs a coordinated, public-private partnership to produce a model approach can help eliminate the potential danger from the inadvertent creation of cybercrime havens. Firms, governments, and civil society should work cooperatively to strengthen legal frameworks for cybersecurity. The first call is to understand where we realistically stand vis-à-vis cybersecurity, and in many cases national security. We have an inadequately staffed and funded structure at the national level. As quoted in a news article “We are becoming backbenchers in global internet governance dialogues”.<sup>45</sup> The NCSP 2013 needs to take a clear, bold look to be more relevant, and implementable on a time bound manner.

### **ACKNOWLEDGEMENT**

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I am immensely grateful to all the following people who agreed to meet a high school student like me and foster my academic inclinations towards their specialized topics and instil the confidence to pursue a field that was entirely different from the disciplines I have studied in my high school years. My sincerest thanks to:-

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- 2) Ms. Malancha Chakrabarty  
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Observer Research Foundation
- 3) Dr. Rajeswari Pillai Rajagopalan  
Senior Fellow and Head, Nuclear & Space Policy Initiative

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<sup>45</sup> <http://www.thehindubusinessline.com/opinion/make-in-india-should-promote-cyber-security/article9180875.ece>



Observer Research Foundation

- 4) Mr. Subimal Bhattacharjee  
Independent Consultant on Defence and Cyber Issues

Finally, I thank my dear parents for trusting in my abilities and encouraging me to undertake a project that was truly challenging.

Swayam Bhatia

## ENDNOTE

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<sup>i</sup> <http://www.bbc.co.uk/history/troubles>

The Troubles refers to a violent thirty-year conflict framed by a civil rights march in Londonderry on 5 October 1968 and the Good Friday Agreement on 10 April 1998. At the heart of the conflict lay the constitutional status of Northern Ireland. The goal of the unionist and overwhelmingly Protestant majority was to remain part of the United Kingdom. The goal of the nationalist and republican, almost exclusively Catholic, minority was to become part of the Republic of Ireland.

<sup>ii</sup> <https://en.wikipedia.org/wiki/Lashkar-e-Taiba>

Lashkar-e-Taiba has been accused by India of attacking military and civilian targets in India, most notably the 2001 Indian Parliament attack and the 2008 Mumbai attacks. Its stated objective is to introduce an Islamic state in South Asia and to "liberate" Muslims residing in Indian Kashmir. The organization is banned as a terrorist organization by India, the United States, the United Kingdom, the European Union, [Russia, and Australia. Though formally banned by Pakistan, the general view of India and the Western countries, including of experts such as former French investigating magistrate Jean-Louis Bruguière and New America Foundation president Steve Coll is that Pakistan's main intelligence agency, the Inter-Services Intelligence (ISI), continues to give LeT help and protection.

<sup>iii</sup> [https://en.wikipedia.org/wiki/Hizbul\\_Mujahideen](https://en.wikipedia.org/wiki/Hizbul_Mujahideen)

Hizb-ul-Mujahideen group is considered to be the largest indigenous militant group in Kashmir. In 1990 Muhammad Ahsan Dar had more than 10,000 armed men under his command. The group was designated as a foreign terrorist organisation by the United States State Department on 16 August 2017. The group has been designated as a terrorist group by India, the European Union and the United States, active in the state of Jammu and Kashmir since 1989. The current commander of the group is a Sayeed Salahudeen.

<sup>iv</sup> [https://en.wikipedia.org/wiki/National\\_Food\\_Security\\_Act,\\_2013](https://en.wikipedia.org/wiki/National_Food_Security_Act,_2013)

## Salient features

Coverage and entitlement under Targeted Public Distribution System (TPDS): Up to 75% of the rural population and 50% of the urban population will be covered under TPDS, with uniform entitlement of 5 kg per person per month. However, since Antyodaya Anna Yojana (AAY) households constitute poorest of the poor, and are presently entitled to 35 kg per household per month, entitlement of existing AAY households will be protected at 35 kg per household per month.

State-wise coverage: Corresponding to the all India coverage of 75% and 50% in the rural and urban areas, State-wise coverage will be determined by the Central Government. Planning Commission has determined the State-wise coverage by using the NSS Household Consumption Survey data for 2011-12.

Subsidised prices under TPDS and their revision: Food grains under TPDS will be made available at subsidised prices of Rs. 3/2/1 per kg for rice, wheat and coarse grains for a period of three years from the date of commencement of the Act. Thereafter prices will be suitably linked to Minimum Support Price (MSP). In case, any State's allocation under the Act is lower than their current allocation, it will be protected up to the level of average off take under normal TPDS during last three years, at prices to be determined by the Central Government. Existing prices for APL households i.e. Rs. 6.10 per kg for wheat and Rs 8.30 per kg for rice has been determined as issue prices for the additional allocation to protect the average off take during last three years.

Identification of Households: Within the coverage under TPDS determined for each State, the work of identification of eligible households is to be done by States/UTs.

Nutritional Support to women and children: Pregnant women and lactating mothers and children in the age group of 6 months to 14 years will be entitled to meals as per prescribed nutritional norms under Integrated Child Development Services (ICDS) and Mid-Day Meal (MDM) schemes. Higher nutritional norms have been prescribed for malnourished children up to 6 years of age.

Maternity Benefit: Pregnant women and lactating mothers will also be entitled to receive maternity benefit of not less than Rs. 6,000.

Women Empowerment: Eldest woman of the household of age 18 years or above to be the head of the household for the purpose of issuing of ration cards.

Grievance Redressal Mechanism: Grievance redressal mechanism at the District and State levels. States will have the flexibility to use the existing machinery or set up separate mechanism.

Cost of intra-State transportation & handling of food grains and FPS Dealers' margin: Central Government will provide assistance to States in meeting the expenditure incurred by them on transportation of food grains within the State, its handling and FPS dealers' margin as per norms to be devised for this purpose.

Transparency and Accountability: Provisions have been made for disclosure of records relating to PDS, social audits and setting up of Vigilance Committees in order to ensure transparency and accountability.

Food Security Allowance: Provision for food security allowance to entitled beneficiaries in case of non-supply of entitled food grains or meals.

Penalty: Provision for penalty on public servant or authority, to be imposed by the State Food Commission, in case of failure to comply with the relief recommended by the District Grievance Redressal Officer.

∨ <http://planningcommission.gov.in/aboutus/history/index.php?about=aboutbdy.htm>

The Planning Commission was set up by a Resolution of the Government of India in March 1950 in pursuance of declared objectives of the Government to promote a rapid rise in the standard of living of the people by efficient exploitation of the resources of the country, increasing production and offering opportunities to all for employment in the service of the community. The Planning Commission was charged with the responsibility of making assessment of all resources of the country, augmenting

deficient resources, formulating plans for the most effective and balanced utilisation of resources and determining priorities. Jawaharlal Nehru was the first Chairman of the Planning Commission.

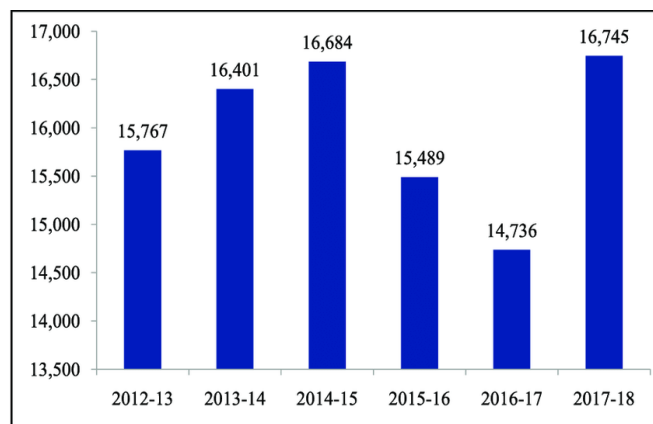
The first Five-year Plan was launched in 1951 and two subsequent five-year plans were formulated till 1965, when there was a break because of the Indo-Pakistan Conflict. Two successive years of drought, devaluation of the currency, a general rise in prices and erosion of resources disrupted the planning process and after three Annual Plans between 1966 and 1969, the fourth Five-year plan was started in 1969.

The Eighth Plan could not take off in 1990 due to the fast changing political situation at the Centre and the years 1990-91 and 1991-92 were treated as Annual Plans. The Eighth Plan was finally launched in 1992 after the initiation of structural adjustment policies.

For the first eight Plans the emphasis was on a growing public sector with massive investments in basic and heavy industries, but since the launch of the Ninth Plan in 1997, the emphasis on the public sector has become less pronounced and the current thinking on planning in the country, in general, is that it should increasingly be of an indicative nature.

vi [https://www.researchgate.net/publication/319165072\\_Fiscal\\_Restructuring\\_and\\_its\\_Impact\\_on\\_Nutrition\\_Financing\\_in\\_India](https://www.researchgate.net/publication/319165072_Fiscal_Restructuring_and_its_Impact_on_Nutrition_Financing_in_India)

*Union Budget expenditure and allocations for ICDS (in INR crore)*



Dramatic changes in the fiscal architecture based on the recommendations of the Fourteenth Finance Commission have raised serious concerns with regard to spending on social sector schemes, particularly those related to nutrition. Following the recommendations, there was a substantial cut in the central allocation for some nutrition-specific programmes as well as nutrition-sensitive programmes. For example, the picture is quite grim for the Integrated Child Development Scheme (ICDS), which is a key scheme designed to provide basic education and health services to pregnant and lactating women and children below six. Although the Twelfth Five Year Plan had proposed an outlay of INR 1,23,580 crore to ICDS, up to 2016-17, the last year of the five-year plan, the central government had allocated only about 63 percent of the ICDS budget during this five-year period. The centre's allocation for ICDS declined consistently from INR 16,684 crore in 2014-15 (AE) to INR 15,489 crore in 2015-16 (AE) and INR 14,736 crore in 2016-17 (BE) (Figure 1). In 2017-18, the allocation for ICDS was increased to INR 16,745.2 crore but the allocation for ICDS in 2017-18 was only 0.5 percent higher than the actual expenditure in 2014-15. However, the scheme continues to be under funded because the cost norms have not been revised according to current market prices.

vii [https://www.huffingtonpost.com/1969/12/31/stiglitz-amartya-sen-gdp- n\\_295764.html](https://www.huffingtonpost.com/1969/12/31/stiglitz-amartya-sen-gdp- n_295764.html)

In a provocative new study, a pair of Nobel prize-winning economists, Joseph E. Stiglitz and Amartya Sen, who urge the adoption of new assessment tools that incorporate a broader concern for human welfare than just economic growth. By their reckoning, much of the contemporary economic disaster owes to the misbegotten assumption that policy makers simply had to focus on nurturing growth, trusting that this would maximize prosperity for all.

According to the report, much of the world has long been ruled by an unhealthy fixation on swelling the gross domestic product, or the quantity of goods and services the economy produces. With a singular obsession on making G.D.P. bigger, many societies – not least, the United States – failed to factor in the social costs of joblessness and the public health impacts of environmental degradation. They allowed banks to borrow and bet unfathomable amounts of money, juicing the present by mortgaging the future, thus laying the ground for the worst financial crisis since the 1930s.

The report is more critique than prescription. It elucidates in general terms why leaning exclusively on growth as an economic philosophy may yield unhappiness, and it suggests that the incomes of typical people should be weighed more heavily than the gross production of whole societies. But it sidesteps the thorny details of slapping a cost on a ton of pollution or a waylaid career, leaving a great mass of policy choices for others to resolve.

viii <https://www.armscontrol.org/factsheets/agreedframework>

On Oct. 21, 1994, the United States and North Korea signed an agreement-the Agreed Framework-calling upon Pyongyang to freeze operation and construction of nuclear reactors suspected of being part of a covert nuclear weapons program in exchange for two proliferation-resistant nuclear power reactors. The agreement also called upon the United States to supply North Korea with fuel oil pending construction of the reactors. An international consortium called the Korean Peninsula Energy Development Organization (KEDO) was formed to implement the agreement.

The Agreed Framework ended an 18-month crisis during which North Korea announced its intention to withdraw from the nuclear Non-proliferation Treaty (NPT), under which North Korea committed not to develop nuclear weapons. (See ACA's Chronology of U.S.-North Korean Nuclear and Missile Diplomacy for more information on U.S.-North Korean nuclear relations.)

The Agreed Framework succeeded in temporarily freezing North Korea's plutonium production capabilities and placing it under IAEA safeguards by freezing operation of North Korea's 5 MWe reactors at Yongbyon and stopping construction of two other reactors – a 50 MWe reactor at Yongbyon and a 200 MWe reactor at Taechon. Experts estimate that without the Agreed Framework, North Korea could have hundreds of nuclear weapons at this point.

ix [https://en.wikipedia.org/wiki/Treaty\\_on\\_the\\_Prohibition\\_of\\_Nuclear\\_Weapons](https://en.wikipedia.org/wiki/Treaty_on_the_Prohibition_of_Nuclear_Weapons)

The **Treaty on the Prohibition of Nuclear Weapons**, or the **Nuclear Weapon Ban Treaty**, is the first legally binding international agreement to comprehensively prohibit [nuclear weapons](#), with the goal of leading towards their [total elimination](#). It was passed on 7 July 2017. In order to come into effect, signature and [ratification](#) by at least 50 countries is required. For those nations that are party to it, the treaty prohibits the development, testing, production, stockpiling, stationing, transfer, use and threat of use of nuclear weapons, as well as assistance and encouragement to the prohibited activities. For nuclear armed states joining the treaty, it provides for a time-bound framework for negotiations leading to the verified and irreversible elimination of its nuclear weapons programme.

According to a mandate adopted by the [United Nations General Assembly](#) in December 2016, negotiations on the treaty began in the [United Nations](#) in March 2017 and continued from 15 June to 7 July 2017. In the vote on the treaty text, 122 were in favour, 1 voted against ([Netherlands](#)), and 1 abstained ([Singapore](#)). 69 nations did not vote, among them all of the [nuclear weapon states](#) and all [NATO members](#) except the Netherlands.

<sup>x</sup>[https://en.wikipedia.org/wiki/Smiling\\_Buddha](https://en.wikipedia.org/wiki/Smiling_Buddha)

Smiling Buddha[a] (MEA designation: Pokhran-I) was the assigned code name of India's first successful nuclear bomb test on 18 May 1974. The bomb was detonated on the army base, Pokhran Test Range (PTR), in Rajasthan by the Indian Army under the supervision of several key Indian generals. Pokhran-I was also the first confirmed nuclear weapons test by a nation outside the five permanent members of the United Nations Security Council. Officially, the Indian Ministry of External Affairs (MEA) claimed this test was a "peaceful nuclear explosion", but it was an accelerated nuclear programme. The device was formally called the "Peaceful Nuclear Explosive", but it was usually referred to as the Smiling Buddha. The device was detonated on 18 May 1974, Buddha Jayanti (a festival day in India marking the birth of Gautama Buddha). Indira Gandhi maintained tight control of all aspects of the preparations of the Smiling Buddha test, which was conducted in extreme secrecy; besides Gandhi, only advisers Parmeshwar Haksar and Durga Dhar were kept informed.

<sup>xi</sup> [https://en.wikipedia.org/wiki/India%E2%80%93United\\_States\\_Civil\\_Nuclear\\_Agreement](https://en.wikipedia.org/wiki/India%E2%80%93United_States_Civil_Nuclear_Agreement)

The **123 Agreement** signed between the United States of America and the Republic of India is known as the **U.S.-India Civil Nuclear Agreement** or **Indo-US nuclear deal**. The framework for this agreement was a July 18, 2005, joint statement by then Indian Prime Minister [Manmohan Singh](#) and then U.S. President [George W. Bush](#), under which India agreed to separate its civil and military nuclear facilities and to place all its civil nuclear facilities under [International Atomic Energy Agency](#) (IAEA) safeguards and, in exchange, the United States agreed to work toward *full* civil nuclear cooperation with India. This U.S.-India deal took more than three years to come to fruition as it had to go through several complex stages, including amendment of U.S. domestic law, especially the [Atomic Energy Act of 1954](#), a civil-military nuclear *Separation Plan* in India, an India-IAEA safeguards (inspections) agreement and the grant of an exemption for India by the [Nuclear Suppliers Group](#), an export-control cartel that had been formed mainly in response to India's first nuclear test in 1974. In its final shape, the deal places under permanent safeguards those nuclear facilities that India has identified as "civil" and permits broad civil nuclear cooperation, while excluding the transfer of "sensitive" equipment and technologies, including civil enrichment and reprocessing items even under IAEA safeguards.

<sup>xii</sup> <https://www.wsws.org/en/articles/2008/09/nucl-s17.html>

In the face of immense political pressure from the United States and a frantic Indian lobbying campaign, the 45-nation Nuclear Supplier Group (NSG) agreed on September 6 to grant India a unique "waiver" exempting the South Asian country from the NSG's rules governing civilian nuclear trade.

Chinese opposition to the decision was only overcome after US President George W. Bush telephoned Chinese President Hu Jintao and a major diplomatic row had erupted between Beijing and New Delhi.

The NSG waiver lifts an over three-decade, US-led world embargo on civilian nuclear trade with India that was imposed after the country first exploded a nuclear device in 1974.

The waiver means India now has the legal right, under the world nuclear regulatory regime, to trade for civilian nuclear fuel and technology.

India is desperate to import advanced technology and nuclear fuel. Its 22 existing nuclear power plants are reportedly operating at 40 percent or less capacity and its own uranium reserves are very limited.

<sup>xiii</sup><http://searchsecurity.techtarget.com/definition/steganography>

Steganography (from Greek steganos, or "covered," and graphie, or "writing") is the hiding of a secret message within an ordinary message and the extraction of it at its destination. Steganography takes cryptography a step farther by hiding an encrypted message so that no one suspects it exists. Ideally, anyone scanning your data will fail to know it contains encrypted data.

<sup>xiv</sup><https://en.wikipedia.org/wiki/Al-Qaeda>

**Al-Qaeda** is a militant Sunni Islamist multi-national organization founded in 1988 by Osama bin Laden, Abdullah Azzam, [and several other Arab volunteers who fought against the Soviet invasion of Afghanistan in the 1980s. Al-Qaeda operates as a network made up of Islamic extremist, Salafist jihadists. It has been designated as a terrorist group by the United Nations Security Council, the North Atlantic Treaty Organization (NATO), the European Union, the United States, Russia, India, and various other countries (see below). Al-Qaeda has mounted attacks on civilian and military targets in various countries, including the 1998 U.S. embassy bombings, the September 11 attacks, and the 2002 Bali bombings. The U.S. government responded to the September 11 attacks by launching the "War on Terror". With the loss of key leaders, culminating in the death of Osama bin Laden, al-Qaeda's operations have devolved from actions that were controlled from the top down, to actions by associated groups and lone-wolf operators. Characteristic techniques employed by al-Qaeda include suicide attacks and the simultaneous bombing of different targets. Activities ascribed to it may involve members of the movement who have made a pledge of loyalty to bin Laden, or the much more numerous "al-Qaeda-linked" individuals who have undergone training in one of its camps in Afghanistan, Pakistan, Iraq or Sudan. Al-Qaeda ideologues envision a complete break from all foreign influences in Muslim countries, and the creation of a new caliphate ruling over the entire Muslim world.