CENTRE FOR ADVANCED STRATEGIC STUDIES

PROCEEDINGS OF SEMINAR

ON

COMPREHENSIVE SECURITY : NEED OF THE HOUR

25th-26th February, 2004

SEMINAR
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(Venue Symbiosis Society, Vishwa Bhawan Auditorium, Senapati Bapat Road, Pune)

BACKGROUND PAPAPER

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Introduction

Chanakya (Kautilya), the mentor and Guru of Chandragupta Maurya was the first statesman to articulate a comprehensive concept of National Security in India. He successfully practiced it. The healthy and prosperous nation state lasted nearly three centuries. The people were happy and healthy and the country secure. He considered internal threats to security more deadly than external threats. He took prompt and firm steps and eliminated these. According to Walter Lippmann, "A nation has security when it does not have to sacrifice its legitimate national interests to avoid a war and is able, if challenged, to maintain them by war".

National security is a comprehensive concept embracing social, cultural, political, economic, diplomatic and military matters. Human security is linked with human well-being taking a global view transcending nation state boundaries. The process of globalization erodes traditional jurisdiction of the nation state both from within, eg. ethnic nationalism and from without, eg. human rights, environmental and trade issues.

The Chinese perspective of comprehensive security is through

the build up of comprehensive national strength in the areas of hard power, soft power, coordinated power and environmental power. The hard power includes national resources, economic resources agriculture, industries, science and technology and defence. The soft power includes politics, foreign affairs, cultural aspects and education , co-ordinated power includes leadership, organization, management, command, coordination of national development aspects.

India's national security objectives have evolved against a backdrop of India's core values, namely, democracy, secularism and peaceful co-existence and the national goal of social and economic development. These are :-

- defending the country's borders as defined by law and enshrined in the Constitution ;
- protecting the lives and property of its citizens against war, terrorism, nuclear threats and militant activities ;
- protecting the country from instability and religious and other forms of radicalism and extremism emanating from neighbouring states ;
- securing the country against the use or the threat of use of weapons of mass destruction ;
- development of material, equipment and technologies that have a bearing on India's security, particularly its defence preparedness through indigenous research, development and production, inter-alia to overcome restrictions on the transfer of such items ;
- promoting further co-operation and understanding with neighbouring countries and implementing mutually agreed confidence-building measures ; and

pursuing security and strategic dialogues with major powers and key partners.

The core values are enshrined in the Constitution in the Preamble and in the Fundamental Rights enumerated in the constitution. The Constitution also spells out the Fundamental Duties and lays down the Directive Principles of State Policy.

Rich in natural, mineral and human resources, India is home to one sixth of the world population. Its land borders extend to 15,600 kms. Out of this 3147 kms are Indo-Pak, 4056 kms Sino-Indian, 4351 kms with Bangladesh, 1643 kms with Myanmar, 1751 kms with Nepal and 699 km with Bhutan. India's sea border is over 7500 kms. The country includes 1197 islands in the Andaman Nicobar group to the east and Lakshadweep group in the west. It has an Exclusive Economic Zone of about 2 million sq km. There are 111 Indian enclaves (17,158 acres) in Bangladesh and 51 Bangladeshi enclaves (7110.62 acres) in India. There are 34 places (2892.31 acres) of Indian land under adverse possession of Bangladesh and 40 places (2251.66 acres) of Bangladesh land under adverse possession of India.

Challenges to internal security are created by a combination of social, economic, ethnic and political factors. Therefore, any solution to the challenges of internal security must take into account these root causes and systematically remove them. Enforcement of law and order is indispensable to the maintenance of internal security.

Galloping population, porous borders and demographic invasion from Bangladesh are posing very serious socio-economic and security problems, particularly in West Bengal, Assam, Manipur and Tripura and also in Mumbai and Delhi. It is not surprising that during the corresponding period, Bangladesh has recorded a negative growth in population.

The security environment of a nation is organically connected with the security environment in its neighbourhood. A neighbourhood at peace with itself provides a congenial environment

for nation's security. Turmoil has implications. There is a danger of Talibanisation in Pakistan. SAPTA, SAFTA portend possibilities of greater economic cooperation within SAARC countries. Relations with Super Powers and major powers also impact the security environment.

The Indian Ocean region matters to almost every country in the world today, because of the enormous volume of trade that takes place along its shipping lanes. For many nations, this trade is both qualitatively and quantitatively a matter, that could threaten their very survival, if cut off or held up for even short periods of time. The Indian Ocean has been discovered to contain vast quantum of non-living natural resources, and immense living natural resources which can be economically exploited. These are attracting many nations which would want to establish their presence. Here in would lie the fundamentals of a mid and long term threat to India's security.

India imported 82 mn tons of crude in 2002-03 and 87.617 mn tons in 2003-04. In 2003-04, 116.678 mn tons of crude oil was processed. Exports in 2002-03 accounted for 51.7 billion US dollars and imports 59.38 billion US dollars showing an adverse trade balance of 7.68 billion dollars. Hike in crude oil prices as also hindrances in crude oil supply lines would pose severe security threats.

9/11 brought into focus the concept of global terrorism. Cross-border terrorism for two decades was dismissed by the international community as Indo-Pak problem. 9/11 has shaken the supreme confidence of the Supreme Power, that is US, in its security. Pakistan is now seen as the epicentre of global terrorism, 13th December compelled the US and the advanced countries to see this "Indo-Pak" problem as one of global terrorism.

In the blinding glitter of globalization and liberalization, hunger, homelessness, oppression, unemployment, debt bondage, discrimination, illiteracy and disease have substantially fallen out of public visibility and conscience. Governments the world over have begun to pursue global capital as their paramount priority, and have

gradually retreated from their primary responsibilities to their populations.

Today, inequalities of wealth and opportunities have mounted to unprecedented levels. Under the impact of globalization, what poor people need is not a retreating state but an activist strong state, and powerful organizations of poor and marginalized people to hold government accountable to them.

We are now witness to a very high degree of environmental and ecological pollution. Land under forest cover has shrunk. There is an alarming increase in air and water pollution. Ecological balance is disturbed. Hawks and birds of prey, the environment's scavengers are fast disappearing. Wreckless use of pesticides, insecticides and plastics is not only affecting the humans but also playing havoc with the bovine lot.

Factory farming and industrial agriculture have largely been responsible for virulent forms of diseases like the mad cow disease, foot and mouth disease, swine fever, avian flu emerging in the animals taking a very heavy toll. Under globalization and pressures for opening of markets these have affected many countries. Export and trade dominated agriculture demands monoculture. Bio diversity which has stood the test of time gets endangered. The state needs to guard against such ecological and environmental threats, by laying down QRs and rigidly adhering to them in imports.

Agriculture is very heavily subsidized in the developed countries. Under WTO framework they manipulate and do their best to force open the markets in the developing countries and dump agricultural products at very low rates. Unchecked this is bound to hit the agriculturists in India very hard. The country needs to forcefully and effectively counter these machinations.

The US case on farm subsidies is outrageous. It subsidises its farmers to the extent of about a billion dollars a day and conceals this in a variety of colourful 'boxes' in order to circumvent the WTO agreement on agriculture. American farmers thus not only have a

protected domestic market but also an opportunity to dump dirt-cheap exports in the Third World, threatening the livelihood of tens of millions of poor farmers.

The recent outcry in the US and Europe against outsourcing is implicitly a protest against globalization, which they had been advocating to exploit the low-cost advantages inherent in the developing countries. From the manufacturing sector, it spilt over to Business Process Outsourcing (BPO) as a popular competitive strategy for MNCs. They thrust large scale liberalization-cum-globalization measures on developing countries in the field of manufacturing and then pressurized them to open up their services sector market by using WTO platform through the General Agreement on Trade in Services (GATS) being pushed into GATT/WTO. This is now boomranging. They now see it as a phenomenon of developing countries stealing their jobs and have made it a political issue. Today American politicians are terrified that millions of their jobs will be outsourced to India. They are caught in a vice. American companies that do not outsource will be bankrupted by global rivals that do. Mckinsey has calculated that for every dollar of work outsourced, the US gains # 1.12 to # 1.14.

The job losses on account of outsourcing to India have been highly exaggerated. Out of 138 million jobs, the US has sent no more than two percent of its 10 million computer-related jobs. India probably accounts for no more than 15 percent of all IT jobs outsourced from America, US opposition to outsourcing goes against free market basics. Large scale unemployment, particularly of the young educated is a very serious socio-economic problem in today's India.

Internationally two dollars/day/person is poverty and one dollar/day/person is chronic poverty. If you apply these yardstricks, 70 percent of our people will qualify as poor and the BPL 26 percent will qualify as worse than chronically poor .

The challenge to Indian economy is how to seize the new opportunities thrown up by globalization, while at the same time

protecting itself against unanticipated risks, and quickly uplifting the largest number of people who are presently below the poverty line.

There is an urgent need to improve water management, in terms of harnessing, sourcing, purity and utilization. Renowned water expert Dr. Madhav Chitale foresees acute water scarcity within a decade or two and has urged restraint on water utilization in the urban areas and augmentation in the rural areas.

Mind boggling development in the Communication and Information Technologies have miniaturized the world. Materialism is on rampage. The Indian traditional culture with strong family and society bonds laying equal emphasis on rights and duties of individuals is under assault. High living and get-rich quick at any cost syndrome often appeals to the young minds. This needs to be effectively countered.

PROCEEDINGS OF THE SEMINAR

The Seminar on "Comprehensive Security : Need of the Hour" was held on 25th and 26th February, 2004 in the Symbiosis Society, Vishwa Bhavan auditorium. It was chaired by Admiral J.G. Nadkarni, former Chief of the Naval Staff. The inaugural address was delivered by Shri M. K. Mangalmurti, IFS (Retd.), giving an overview of Comprehensive security.

National security is a comprehensive concept embracing social, cultural, political, economic, diplomatic and military matters. Human security is linked with human well-being taking a global view transcending nation State boundaries. The process of globalization erodes traditional jurisdiction of the nation State both from within, eg. ethnic nationalism and from without eg. human rights, environmental, ecological and trade issues. There is a need to educate people about Comprehensive National Security in its multi-dimensions.

India's national security objectives have evolved against a backdrop of India's core values, namely democracy, secularism and peaceful coexistence and the national goal of social and economic development. These have been enshrined in the Constitution, in the Preamble and in the Fundamental Rights enumerated there in. The Constitution also spells out the Fundamental Duties and lays down the Directive Principles of State Policy. Shri M. K. Mangalmurti in his inaugural address covered the multi-dimensions of the subject. Dr. Bhushan Patwardhan, Head, Department of Health Science, University of Pune chaired the session on "Environmental Security". Dr. Bharat Bhushan, Professor, Yashwantrao Chavan Academy of Development and Administration made his presentation on "Perspective Planning for Environmental Security". He highlighted the severe damage to the environment due to rampant use of pesticides, due to pollution of fresh water systems, due to rapid unplanned urbanization and industrialization. Large scale deforestation and severe damage to bio-diversity are worrisome developments.

The session on "Water Security" was chaired by Shri M.G. Padhye, former Secretary, Irrigation, Government of India and former Chairman, CWPRS. Shri V.M. Ranade, former Secretary, Irrigation, Government of Maharashtra and Shri K. R.

Subramanian, Chief Engineer, National Water Academy, Pune were the main speakers. Water security compels efficient harnessing of water resources, efficient management and equitable distribution of available water, and utmost economy in the actual use of water. There is a pressing need to divert water from plentiful supply regions to drought affected scarce supply regions through inter-linking of rivers. Water planning and water-management should be people centred.

The last session on "Human Security" had Dr. N. Jayaram, Professor and Head, Department of Research Methodology, Tata Institute of Social Sciences, Mumbai and Dr. Sanjay Baru, Chief Editor, Financial Express, New Delhi as the main speakers. Dr. Jayaram dealt the subject from a sociological perspective. He explained the various components of human security and the complexity of developing benchmarks for assessing performance nationally or the development of an index for comparing the human security situation internationally. Dr. Sanjay Baru traced the security concept from the cold war period, and that prevailing after the collapse of the Soviet Union, and the current position with a new power equation, the US being the dominant power. He said that terrorism is a serious threat with non-state actors coming into play. He said that we need to develop technological capability to face the serious challenges to our position in the world in the next one or two decades. We need to translate our strategic resources, natural, human, entrepreneurial, financial, technological and defence into competent capabilities. India is rich in generating ideas. India needs to develop interdependence of Indian economy with its neighbouring countries as China has been doing. We need to tap and exploit our potential. Much depends upon our relations with major powers, China, Europe, US, Russia, Japan. We should emulate China in respect of diplomatic capability.

The Seminar was then thrown open for general discussion which was animated and lively. The Seminar mainly covered environmental security, ecological security, water security and human security. To cover the entire area of comprehensive security, it was generally agreed that another seminar was required to do full justice to the subject. Air Marshal S. Kulkarni, Director of the Centre thanked the main speakers and the participants and declared the seminar closed.

WELCOME BY DIRECTOR AIR MARSHAL S. KULKARNI

On behalf of the Centre for Advanced Strategic Studies, I welcome you to the seminar on "Comprehensive Security : Need of the Hour". Admiral J. G. Nadkarni, former Chief of the Naval Staff Chairman of the Seminar. We will have the Inaugural address on "Overview of Comprehensive Security" by Shri M. K. Mangalmurti, IFS and member of the Centre. After this, in the second session, Dr. Bhushan Patwardhan, Head, Deptt. of Health Science, University of Pune, will chair the session on "Environment Security". Dr. Bharat Bhushan, Professor, YASHADA, Pune would be making his presentation on "Perspective Planning for Environmental Security". Dr.Vandana Shiva who was to speak on environment has been most unexpectedly held up in Dehradun and inspite of her best efforts could not catch the Delhi flight. The third session would be on "Water Security" which will be chaired by Shri M.G. Padhye, former Secretary, Irrigation, Govt. of India and former Chairman of CWPRS. Shri V. M. Ranade, former Secretary. Irrigation, Govt. of Maharashtra and Shri K. R. Subramanian, Chief Engineer, National Water Academy, Pune would be making their presentation on "Water Security". The fourth session would be on "Human Security" by Dr. Sanjay Baru, Chief Editor, The Financial Express, New Delhi and Dr. N. Jayaram, Professor and Head, Deptt. of Research Methodology, TISS, Mumbai.

Thereafter we will have general discussion and the closing remarks by the Chairman.

It is suggested that the main speakers make their presentation in 25 to 30 minutes leaving 15 to 20 minutes for questions answers and comments at the end of each session. At the end an hour has been allotted for general discussion. I now request Admiral J. G. Nadkarni to take over and give his opening remarks.

SESSION I

OVERVIEW OF COMPREHENSIVE SECURITY

Chairman : J. G. Nadkarni

INAUGURAL ADDRESS BY SHRI M. K. MANGALMURTI

It is said that a nation tends to prepare for the last war. This is a natural human failing and it takes a very special effort to overcome it. Are we making the same mistake? Is our thinking conditioned by the two world wars? Are we pouring our scarce resources to prepare for a conventional conflict, which may never occur?

The human mind tends to give undue importance to the external military threat. It is easy to blame others than to admit one's own shortcomings. Actually, the threat of military conquest is generally overestimated in today's world. Since the second world war I cannot think of any country having been conquered or annexed or colonized by a superior military power. In fact Vietnam is an example of an overwhelmingly powerful military force being defeated and having to withdraw.

It is true that regime changes have been successfully effected by outside force but these can only last if the people of those countries approve of them. Take the example of Iraq. One can see that, like Abhimanyu, it is easy to enter but difficult to exit from a conflict even when one has military superiority. Israel with all its military superiority has not been able to sort out the Middle East conflict.

Let us first analyse what threats we are facing before we can think of achieving comprehensive security. First and foremost is

militancy. India has constantly been afflicted by militancy of various sorts and in different regions- in Kashmir, in the north east, in the Punjab and from the Naxalites. Our Nuclear weapons, aircraft carriers and stealth weapons on which we spend a huge amount of money are totally irrelevant in tackling these.

Then there is the threat to health. With increasing trade and tourism there is unprecedented movement of people bringing in the threat of diseases such as SARS, Bird Flu, AIDS and Tuberculosis. We need to examine if we have health controls and disease control measures in place, which can cope with these threats.

Food security, is also very important and we seem to have done well in this respect.

Coming to Energy Security. We need a proper energy policy. A balance in Nuclear, unconventional and conventional sources of energy is a major requirement. Also, the ongoing reform of the power sector is a step in the right direction. We must push ahead with pipelines for gas and petroleum from the Gulf and Central Asia. International guarantees could be sought for these. If Pakistan ever thinks of interfering with the pipelines passing through that country we should plan our own retaliatory measures such as cutting of the water supply assured under the Indus Waters Treaty. Withholding the construction of these pipelines is only harming us..

Economic problems can cause as much damage as military threat. Fiscal deficits of States is a time bomb. Scams, Counterfeit currency are other issues which we seem to be unable to prevent.

Communal harmony India's security will be seriously jeopardised if we ever neglect this aspect. Events like the Gujarat riots must not be allowed to happen and an all round approach is needed to ensure the strengthening of secular values.

Illegal immigration from neighbouring countries is a serious problem and a national awareness campaign and firm measures are required.

We should work assiduously for better relations with neighbouring countries. Our record in this respect is not brilliant. Regional Cooperation is good medicine for regional peace and harmony. Examples are: the EU and Asian, We should see that SAARC takes off in our region.

An emerging threat to our lives and well-being is the degradation of environment. If we do not pay adequate attention to this we will suffer great harm. Water and land resources as well as human health will all get affected. Our future generations will pay the price for our profligacy. Water scarcity. it can affect our food sufficiency as well as our economy. I do not wish to waste your time by commenting on this since we have a session planned for discussion on this.

We are also what is commonly regarded as a soft state. We do not seem to have full control over what happens within our borders. Illegal immigration takes place, weapons get supplied to militants, terrorist infiltrate at will and strike wherever they like. We keep on whining about others trying to harm us but take no steps to strengthen our own administration and security. We need to give some thought to this aspect as well.

It is not as if there is any disagreement about these issues. What is important is how to strike the right balance. The question is how should we allocate our scarce resources properly? Regrettably, there seems to be no serious discussion on these issues during the debate on the budget in Parliament.

It was not my intention to make definitive pronouncements on the issues raised here. We are at the beginning of this seminar and I hope that the participants will find the answers to how best to achieve comprehensive security for our country.

SESSION II

ENVIRONMENT SECURITY

Chairman : Bhushan Patwardhan
Main Speaker : Bharat Bhushan

GIST OF PRESENTATION MADE BY DR. BHARAT BHUSHAN

The rampant use of pesticides has failed to contain the spread of caterpillars, seriously affecting cotton crop production. India's agricultural soils have been depleted of their natural strengths due to exponential increase in the use of inorganic pesticides and chemical fertilizers. The soil fertility can be restored by organic farming. He said that people-centred planning alone can combat desertification and drought. Watershed activities and participatory planning needs to focus on suitable crops, conserving rainfall and harvesting it, alternate technology, changes in crop patterns and local pastoral systems. In India about 69 per cent of the available fresh water is consumed by the agricultural sector, and about 23 percent in industry. Only remaining 8 percent is potable and fit for consumption. Pollution of our fresh water systems is a major threat to the health of our rivers. About 75 percent of water pollution is caused by sewage, domestic wastes and food processing plants. A staggering 70 percent of the available water in India is polluted as reported by NEERI, Nagpur. Rapid urbanization and industrialization has spoiled not only surface water reservoirs, but also ground water resources. The severity of floods indicate that run off water has been denied access to the natural absorbing or sponging areas such as wetlands and marshes which militates against maintaining healthy ecosystems.

He said that biodiversity is the sum of genetic, specific and ecosystem richness on the planet, and that it is the fundamental basis for evolution and for continuing adaptation to changing circumstances. India's biodiversity is one of the most significant in the world. 45000

wild plant species and 77000 wild animal species have been recorded, comprising nearly 6.5 percent of the world's known wildlife. Equally impressive is the range of domesticated biodiversity. Atleast 166 species of crops and 320 species of wild relatives of crops are known to have originated there. Also significant is the indigenous live stock diversity, with 27 breeds of cattle, 40 of sheep and 22 of goats. Atleast 10 per cent of India's recorded wild flora, and possibly a larger fraction of its wild fauna are threatened, with many on the verge of extinction. India during the last few-decades has lost 50 per cent of its forests, polluted over 70 per cent of its water bodies, built or cultivated over its grasslands, and degraded many coastal areas. Perhaps the greatest factor in the disappearance of thousands of varieties of crops has been the spread of modern chemical based agriculture. A handful of high yield variety seeds have replaced countless indigenous varieties. That is most evident in crops such as rice. The broad genetic base for the rice crop provided insurance against pests and diseases, and a ban for desired characteristics like nutritional value and fodder potential in residues. Equally important, these varieties were culturally valuable.

SESSION III

WATER SECURITY

Chairman : M. G. Padhye
Main Speakers : V. M. Ranade
K. R. Subramanian

PAPER PRESENTED BY SHRI M. G. PADHYE

The Concept

The concept of Water Security in relation to fresh water as opposed to sea water has to be looked at from two different aspects: Water security in the eyes of common man and water security for the society at large. Although the two form the two faces of a single coin, differentiation has to be made as the common man may have a different and perhaps a limited perception of water security but it is also important.

Common Man's Perception

Water, next to air, is a basic necessity of life for survival. The common man's perception is therefore, dependent on his prime need, food and shelter being his next priorities. It is for this reason that the National Water policy gives first priority to water for drinking and more generally for domestic use. The common man perceives human needs for fresh water in terms of his need of water for domestic use, which depends on his location, the village town or cities as the case may be, his economic status, to a certain extent conditioned by his perception about its availability in the local scenario, In his view, if his perceived needs of water for domestic use are satisfied within reasonable limits, normally he is not worried about the water security aspects otherwise.

The Society Perception

The scope of the society perception of water security is much wider and encompasses all types of uses to which water can be and needs to be used. Water can be put to multifarious use, for drinking and other domestic use, in industries, for agriculture, for generation of hydro-power, for environment protection and also its enrichment, for recreation and at times for navigation. The role that the domestic water use is expected to play, contrary to general impression, is much smaller though the most important. Quantitatively the human needs of water for domestic uses could vary from about 50 litres per day per person in water short areas or villages to as high as 200-250 lpd in townships or even more. It is not realised that apart from this visible water for all other facilities that an individual uses during the day including the food that he consumes, a much larger quantity of water, perhaps 5 to 10 or even 15 times his use of daily visible water. It is very difficult to assess the water that will be required by the various industries as this requirement varies from industry to industry. However, it is generally seen that this requirement rarely exceeds the total demand for domestic water. Somewhat redeeming feature of the above assessment is that about 80-85 % of water for domestic use and about 90-95 % of the water for industrial use comes back as return flow to the river system, but often polluted. There could be exceptions to this statement, however.

At the global level, it is recommended that the reasonable water availability per person would have to be at least 6000 litres per day or about 2500 cubic meters per year. this implies that at this level of availability an individual can lead a comfortable life and this at least should be the target for achievement. On this background, the gross availability water on all India basis will be about 2400 cum per person for 100 crore population. However, the question is this water available all the year round and in the entire country? The basic source of water for India is the Monsoon where the rainy days are about 90 to 100. Further this monsoon is highly variable, over 10000 mm around Cherrapunji in North-East and 100 mm or less in Western Rajasthan. Further, variations of the monsoon are larger

in areas of low rainfall. Therefore, not the overall availability but the water that can be put to use, will have to be the criterion for assessing the water security problem for Indian conditions. As of this date, it has been assessed that about 40-45 % of the available water can be put to use and the rest will go to the sea. This reduces the availability per person from 2400 cum per person per year to about 1000 cum. With the perspective population of 150-180 crores by 2050 AD this will be further reduced to 550-650 cum per person per year. This is again on an average. If the regional variations of gross availability are considered, the distress situations will be reached much earlier in some areas. Drought situation in the chronically drought prone regions will aggravate this distress still further.

On the macro scale the picture is not so rosy. On the sub-macro scale, on regional basis or river valley basis the picture will be still alarming. About one third of the gross water resource of the country is available in the North-East where the gross availability exceeds 16000 cum per person per year. Another one third is available in the Indo-Gangetic basin at about 1500 cum per person per year. In both the above basins it is known to cause flooding causing damage to an area of 8 mha annually on an average. About one third area of the country in 99 districts is drought prone where water availability is already poor. In The Krishna basin the gross availability is already low 1250 cum per person per year. In The Cauveri basin it is still lower, about 800 cum. In The Pennar Basin it is still lower about 650 cum. In Western Rajasthan areas of The Luni Basin it is lower still. On the micro and sub-micro scale the situation will be worse still. It is on this background the water security issue will have to be considered.

Approach to Water Security:

This question will have to be tackled on many levels, at the National level, the State level, the Valley level, District level, Taluka level, Village level and also the Watershed level. The solutions may have to be location specific, therefore, only some generalised approach will be indicated.

It will be obvious that for ensuring water security it will be necessary to make the available water available for use at almost all times when needed and systems to ensure this availability will be required to be employed or adopted. At National, regional and also at State levels, it will be necessary to ensure that the water of the rivers which otherwise will flow to the seas is prevented from going to the seas to the maximum extent possible, using all forms for such retention as may be possible and carry it over distance to needy areas. This will include retention in watershed protection and management measures, retention in small ponds, village tanks, small medium, large or even mega-size reservoirs, natural or deliberate ground water augmentation and the like. It will also be necessary to use, reuse and use again and again as much of the water that gets regenerated in the process of its use in the river system, this stored water and also the natural precipitation in the most economical manner to generate maximum production per unit of water, so to say "Maximum crop per drop". In addition, care will also have to be taken to ensure that in the entire process of its use the water does not get polluted beyond permissible limits to prevent its use further and thus make its wastage inevitable. The National Water Policy (2003) lays down this approach though not in so specific words.

Security Relationships: Food Security.

Water security is intimately tied up with food security as its major use, to the extent of 80-90 %, will be for irrigation. Presently, India has reached a food production level of 200 MT as against about 50 MT in 1950-51. Although this is an achievement, it will not be advisable to rest on our laurels as we have much larger challenges to face in the next 50 years. Indian population is expected to reach a figure of 1500-1800 million by 2050 AD. At reasonable levels of calorific consumption it will be necessary for us to be able to produce about 450-500MT of food on a sustained basis from the otherwise finite and progressively reducing cultivable land resource which may then be of the order of 120-130 mha. This will require average productivity of land to be of the order of 3.5 to 4.5 T/ha. This will

mean the productivity of irrigated land will have to be of a still higher order, of the order of 5 to 6 T/ha and on an extensive area. To achieve this adequate and timely availability of water for agriculture will be a prerequisite. In the larger interests of the country, it will be necessary for India to be self-reliant, as opposed to self-sufficient, in food production as it is anticipated that at that time there will be very few countries which may have surplus food supplies for sale. At what financial and also the social costs such supplies may have to be procured then, is best left to individual imagination.

Individual Perceptions:

Water Security is also tied up with individual perceptions. This aspect gets prominence in respect of the minimum water requirement for drinking and allied domestic use and also for agriculture, largely from people from the underprivileged class of the society, from those who stay in hilly areas and also from those in the otherwise water-short areas. In years of low rainfall or drought situation their plight becomes unenviable. In the present market oriented economy, rigorous application of economic parameters otherwise applicable to water resource development will not be appropriate and the society must adequately cater for their needs of water.

Just as water is a social good it is also an economic good. From this angle, water used for agriculture can be treated as economic good. Individual perception from this angle is related to entitlement or right to appropriate the natural resource for individual benefit.. There could be some area of conflict about this individual perception vis-à-vis the society perception. The individual would want to make use of water for irrigation to get maximum output per hectare of his land., while the society might want it to be used for generating more crop per drop as the former might not be the most efficient use of the resource. Therefore, it would seem proper to treat water as a socio-economic good to be used for the economic well being of the society at large keeping in view the needs of the economically underprivileged. The debate on this aspect could be rather prolonged. From one angle it is argued that at least 3000 cum of water per year needs to be

allocated to a farming family so that it can generate adequate wealth to cater to the family food and energy needs and sustain itself. Thus, the allocation of water becomes family based but it has an undercurrent of tying the allocation to those who own agricultural land. Some experiments in this direction are understood to be under various stages of progress in Maharashtra, one in Atpadi Taluka of Sangli District in the water short area and one more in The Chikotra sub-valley in Kolhapur district, a relatively ample water area. It is understood that Maharashtra Government has agreed in principle to try these as experiments. The results would be educative. Near Pune, in The Kolvan sub-valley "Gomukh", an NGO, is reported to have put in operation an exercise in valley planning concept of WRD. Somewhat similar exercise is reported to have been undertaken in The Hiranyakeshi sub-valley, another ample water area, through leadership of Marathi Vigyan Parishad, Kolhapur Division. Success stories of the Ralegaon Siddhi Experiment in Rural development through Watershed Development and the experiment of Johads in Rajasthan are well known. The work undertaken in watershed development by "Vanarai", another NGO in Pune is also well known. What is needed is fast replication of such measures which would at least to some extent, meet with some of the individual perceptions in relation to WRD. It seems necessary to objectively evaluate the success stories in this regard so as to understand the bottlenecks and the problems of replication on a large scale and clearly understand the limitations of the measures, if any. As a matter of fact, such people oriented and managed systems have to be a way of life with the society.

Distribution of Waters of Government Systems

Distribution of waters of the government owned and managed irrigation systems to as large a number of beneficiaries as practicable, is one of the point raised with respect of equitable distribution of water. In a limited way, some beginning in this direction is already under way. For management of government owned and managed irrigation systems, a system to hand over the management of irrigation beyond the outlet by associations of the

beneficiaries termed Water Users' Associations and supplying them measured quantum of water priced on volumetric basis and leaving internal distribution, adoption of cropping system and also charges to be recovered for such use was put into practice on experimental basis way back since1982. It has made considerable progress. As of now Andhra Pradesh modified their irrigation act (19) to make WUAs on canal systems obligatory in that State. Maharashtra is also in the process of enacting a somewhat similar legislation. The controversial Sardar Sarovar Project provided management of irrigation beyond the outlet through similar Village Service Associations in the concept of the project as proposed for techno-economic clearance. These are welcome signs of changes to come.

Some Possible Conflicts:

A mention needs to be made of some of the possible conflict situations in regard to WRD, as they are relevant to the question of water security. It is expected that some of them will be discussed in this workshop in separate sessions. One of them relates to the need for maintaining or rather minimising and compensating to the extent practicable, the destructive effect of WRD on the environment. It would be easily accepted that mankind is the pivot around which the environmental considerations would revolve and the effort at his survival or improvement of living standards to a reasonable level, would be environment enriching effort. Further, environment is not static and is in dynamic balance with the disturbing forces and over periods it assumes a new dynamic balance with them. Every development activity is bound to cause some disturbance of this balance. What is required is to ensure that this disturbance is kept at the lowest practicable level so that period required for attaining the new balance is as short as possible and special care is taken to ensure that the disturbance does not cause progressive deterioration of the environment.

Submergence of lands and habitats of people, and animals also, is perceived as one of the important destructive effect of WRD effort. In the context of water security in relation to food security described earlier, here is no other alternative to maximising development of

water resource in the manner indicated earlier. Some of the components of WRD cannot avoid submergence of human and animal habitats in the larger interests of the society's well being. What is required is that adequate steps are taken, not merely to compensate the people so disturbed but to ensure that they are appropriately rehabilitated in such a manner as will enable them to be partners in the prosperity the WRD project may be expected to bring. This would require a pragmatic and progressive rehabilitation policy and its timely and purposeful implementation with a human face. Government of India is in the process of laying down a National Rehabilitation Policy. Maharashtra has assumed legal responsibility for rehabilitation of affected people since 1976 and has revised its policy based on experience in 1986.Further revision (1996) is under consideration. Madhya Pradesh has also enacted a legislation for rehabilitation of people affected by WRD in 1986 and Karnataka in 1987. Other States follow somewhat ad-hoc policies for rehabilitation. Well meaning persons and associations who champion the cause of the displaced must also make constructive contribution towards evolving a better rehabilitation policy.

Possible alternative uses of water could at times be some cause of conflicts. Presently priority of uses in the policies of government has given rise to some arguments against them. Some conflicts could arise about the best use of water in a given situation especially when multipurpose uses are planned. Such conflicts are likely to be resolved in due course some times due to exingencies in a given situation, government interventions and the like.

Other uses of water.

Mention must be made of many other uses to which water resource will be used. Water can be put to multifarious uses, such as for drinking and domestic use, for agriculture, for industries, for generation of hydro-power, for flood control, for environment control and enrichment and also for recreation. In Indian context, use of water for navigation might not be substantial. Industry is not expected to consumptively use a large quantity of water, but it will

have to take care that it does not release its polluted effluents without adequate treatment to the river systems or ground waters and in the process pollute the otherwise fresh water and render them useless or impair their productivity. The rigorous enforcement of the provisions of the existing regulatory enactment's in this regard may be expected to take care of this aspect. Hydro electric generation does not use water consumptively except for evaporation losses from reservoirs and an insignificant loss in the process of energy generation. However, in the energy scenario of the country the hydro-power projects are expected to play a key role requiring fuller development of the hydro-electric potential of the country. However, there will be only a few projects exclusively for energy generation. Similar is the case of flood control projects and water projects for recreation as almost all large projects will be for multiple uses.

Ground Water:

In the foregoing security aspects largely related to WRD in general with special emphasis on surface water. The problems relating to the ground water need some special mention as it is largely under control of individual. This individual control has often resulted in exploitation of this resource beyond the natural recharge capabilities resulting progressive lowering of Ground Water Table. Establishing control over ground water extraction is rendered rather difficult due to the large number of users located over extensive area. This is also rendered somewhat difficult by the problem of defining a well defined methodology for assessment of ground water, which in essence is an approximation of a mathematical treatment of flows through porous isotropic media. These methods work well in alluvial plains within reasonable limits but have limited applicability in hard rock regions especially in Deccan Plateau. Although some efforts at legislative control of management of ground waters in Indian contexts have been made the experience of their operation seems rather inadequate.

Epilogue:

It will be thus evident that the problem of water security is

closely linked to the people and as such will require their involvement. The manner in which this involvement could be achieved would need to be considered carefully. Perhaps appropriately empowering local institutions in WRD with appropriate delegation and control and thus ensuring their involvement may be worthwhile. Some beginning in this direction is already made in the form of WUAs for irrigation management of government irrigation systems.

PAPER PRESENTED BY SHRI V. M. RANADE

Water security could possibly be defined as 'satisfying the needs of all competitive uses of water for the human beings and that of natural ecosystems on a sustainable basis'. In other words, the issue gets confined to integrated development and management of water resources, to meet all demands on it.

Air, water, land and solar energy are the life support systems for all the living beings on this earth. Air and solar energy is abundant and freely available. Land resource is finite, and owned by individuals, state or the country. Primary source of water resource is precipitation which includes rainfall and snowfall, and has following characteristics.

- Even though precipitation has large spatial and temporal variation and variability from year to year, its availability as an average value over a long period is finite.
- It s a dynamic resource, which needs to be stabilized by introduction of human systems, if is to be used to meet human needs.
- It is a renewable resource as against minerals.
- It is a reusable resource.
- It is, however, vulnerable to pollution.

Precipitation gets manifested into blue water and green water. 'Blue water' is the one which flows through surface streams or through groundwater aquifers. 'Green water' is the water that is used directly for biomass production and lost in evapotranspiration.

Green water support terrestrial ecosystems (forests grasslands etc.) and manmade ecosystems (rainfed agriculture). Blue water support aquatic ecosystems and could be used to meet human needs.

Water demands by humans are mainly for drinking water and domestic use, irrigated agriculture and industrial use. Since availability of water is variable and confined to a limited period in a year, whereas demand for water is all the year round, it is essential to introduce human systems such as barrages, bandharas, dams, wells etc. in the natural systems. During the 20th century even though population of the world increased by 3 times, water consumption increased by 7 times, mainly due to increased demands on account of industrialization, urbanization and increased food production (from limited land resource).

Development and management of water resource has been a very complex process because of location specificity of man-made structures (dams, barrages etc.) and that of some demands (industrial complexes, metropolitan and urban growth centers) coupled with need for dispersal of irrigation benefits in meeting social justice. All development activities such as barrages and dams have some undesirable social (resettlement of people) and environmental (terrestrial and aquatic ecosystems) impacts, which demand their careful assessment and adoption of mitigation measures.

In order to make optimum utilization of water resource in a watershed/sub basin/ river basin, construction of large, medium and small size reservoirs to support surface irrigation schemes is the inevitable choice. Bandharas, barrages and diversion weirs are suitable for rivers having sustainable flow for major part of the year. As against that, groundwater development augmented by watershed development helps in extending irrigation benefits to the rainfed cultivators disadvantaged section of the rural population. Lifts from reservoirs and rivers also meet irrigation needs of cultivators located at higher elevations, to whom access to irrigation is otherwise not possible. In order to ensure water security to all sections of the society, by optimum exploitation of water resources in

the basin, all these different measures are necessary. They cannot act as a substitute to each other, but they are complementary to each other. Each alternative has different objectives and different beneficiaries spread over spatially over the basin. Hence one cannot replace the other, though advocated by those who cannot appreciate these points.

In our country, there is very large spatial variation in the magnitude of precipitation and hence the water resources. Some basins are water-surplus and some are water-scarce. In order that the development of water-scarce river basins may not be stunted for want of adequate water resource, next logical step would be to even out this ill distribution of water resource by transfer of water from water-surplus basins to water-scarce basins, which is at present called as interlinking of rivers. If we have to plan for water and food needs of the population of our country by 2025 and 2050, Inter Basin Water Transfer is a must, to ensure water security on a sustainable basis.

Pollution of water in aquatic and man-made ecosystems because of release of effluents from domestic, industrial and agricultural use has become a serious threat to the availability of water resource, because of its degradation by the pollutants. It has affected the water availability quantitatively and qualitatively. Gravity of this problem is unfortunately not well understood by the developing countries and hence very little is being done to treat the polluted water to make it suitable for other uses. This issue also is going to be a great challenge before the developing countries in the coming decades.

Water is a very powerful agent in bringing socio-economic development of the society. Water security plays very vital role in ensuring well being of the society. If measures such as optimum exploitation of entire water resources in a basin and its equitable distribution amongst all sections of the society, inter basin water transfer to even out ill distribution of water resource in our country and adoption of water pollution control / improvement / treatment measure are taken on the lines indicated above, it should be possible to achieve water security to all sections of the society on a sustainable basis, by meeting needs of natural ecosystems.

PAPER PRESENTED BY SHRI K. R. SUBRAMANIAN

Water resources development is the backbone of all other developments. Water is needed for growing food and fodder and also for drinking and domestic use and industrial production. Without sufficient water availability, no development can take place. Therefore the primary concern of the community should be to develop its own water resources first.

India's economic development mainly depends upon agriculture. 70% of the population is engaged in agriculture. Success in agriculture depends upon irrigation.

Large parts of India are affected by droughts and famine conditions were very frequent in yester years. Now the situation has changed. Food situation has improved well. The present food grain production is about 200 Metric tones. We are in a position to export food grains.

This is due to green revolution in the country, which has been possible due to increase in the irrigation facilities by construction of major, medium and minor irrigation projects in large numbers. Nearly 4000 dams have been constructed in India small and big ones. This has resulted in increase in irrigation potential created from 22.6 Mha. in 1951 to 96.70 Mha in 2000. The food grain production has increased from 51 million tones in 1951 to 200 million tones. The hydropower potential has been developed from 508 MW in 1947 to nearly 22000 MW in 2002.

The population in India is growing and it is estimated to stabilize at 1.5 billion in 2050. The foodgrain production also should increase to about 450 to 500 Million tonnes by 2050. Food security and water security for the growing population are to be ensured for human survival and sustainable economic development. Food security depends upon water availability and easy access to water at affordable cost.

The total fresh water available per year through rainfall and

snowfall has been assessed as 4000 B.cu.m. approximately in the country. The utilizable fresh water resources of the country has been assessed as 1140 B.Cu.m. which consists of surface water 690 B.cu.m. and ground water 450 B.cu.m. The water demand from all sectors is likely to be 1050 B.Cu.m. by the year 2025. Therefore both the supply and demand are likely to be almost equal by the year 2025. After that we require more water to cater to the needs of the population.

The distribution of rainfall is uneven through the country both in space and time. Therefore, some areas experience floods every year and other areas drought. (1100 cm. in Cherrapunji, 11cm in some areas of Rajasthan). Therefore, there is a need to distribute available water evenly in space and time. It is necessary to adopt both supply side and demand side management to tackle the water problem.

Supply side management-the rain water must be conserved both in quantity and quality. Storages must be created to store rain water on the surface by construction of small, medium and large reservoirs and dams, barrages, weirs, tanks, ponds etc. Storing of water below ground by augmentation of ground water is also necessary.

We have constructed nearly 4000 dams in India, small and big, until now. These dams have helped us to store precious rain water on the surface of ground to use for various purposes. More dams and reservoirs will be needed to store rain water going waste to sea when people suffer in some regions for want of water.

The development of surface water storages for irrigation, water supply needs has not been keeping pace with the demand for water. This has resulted in increased use of ground water for satisfying these purposes. The rate of withdrawal of ground water has gone much beyond the rate of recharging by rain water by natural means. This has resulted in marked lowering of ground water levels in many areas.

Watershed development and rain water harvesting to recharge ground water will help to augment the water supply. In rural areas where the rainfall is deficient and no irrigation project serves the area, the rain water can be harvested by construction of check dams, gully plugs, percolation tanks, farm ponds, terracing of land slopes etc. By this both soil and water conservation will take place. State and Central Governments are supporting the watershed development programmes all over the country. But watershed development alone cannot cater to the full demand for water. At the most it can satisfy only a small percentage of future demand.

In urban areas roof top rain water harvesting will have to be done by the whole community and by recharging of ground water by charging the dug wells, tube wells etc. the ground water level will go up. Water supply position from wells and tube wells will improve and due to higher level of ground water, cost of pumping and energy used will also reduce. The cities like Delhi, Chennai are already adopting this method. Other cities like Mumbai, Pune, Hyderabad, Bangalore etc. will also have to go for it in a big way. Governments have made it compulsory in Delhi and Tamilnadu for buildings having area above certain limit.

Inter basin and intra basin water transfer by linking of rivers in the country to transfer surplus and flood waters to deficit areas is another option available for meeting the water demand. After 2025 AD, we require more water in addition to the 1140 B.cu.m. which is available by construction of conventional structures. By interlinking of rivers, it is estimated that 250 B.cu.m. of additional water can be made available for use. 35,000 MW of additional hydropower can be generated. There are other benefits like flood mitigation, navigation, huge employment generation and overall economic development. A National Perspective Plan was formulated by the Ministry of Water Resources way back in 1980 for Water Resources Development by transferring water from surplus river basins to deficit river basins in the country. NWDA has been conducting studies and preparing pre-feasibility and feasibility reports for 30 river links.

Supreme Court gave following observations in October, 2002 in

a Civil Court petition about interlinking of rivers project.

(a) To set up a task force to go into modalities for developing consensus among states.
(b) Expressing expectation of the Supreme Court to complete the ILR in 10 years.
(c) And that if legislation is made under entry 56 (list 1) need for states consent would not arise to enable completion of the programme in a reasonable time of 10 years.

After this observation by the Supreme Court, Govt. of India set up a Task Force headed by Shri Suresh Prabhu, ex. Cabinet Minister with a multi-disciplinary team of members for devising modalities for speedy implementation of the ILR Project. The Terms of Reference for the Task Force for the interlinking of rivers project are as follows :-

(a) Provide guidance on norms of appraisal, viability, impacts.
(b) Devise mechanisms for achieving speedy consensus.
(c) Prioritise project components for DPR and for implementation.
(d) Propose organizational structure for implementation.
(e) Suggest modalities for project funding.
(f) Consider international dimensions.

The Task Force, so far has made action plans and formed many working groups and consulted state Governments. The Task Force is adopting a multi-disciplinary approach and several resource institutions have been identified like the Energy Research Institute and NEERI for Environmental and Ecology aspects, NCAER for Socio-Economic and cost recovery aspects, ICICI and NIPF&P for funding and cost recovery aspects, Wildlife Institute, Dehradun for wildlife preservation and related aspects, FRI for forest related issues, ISRO and Survey of India for speedy survey and investigation inputs, XISS and CDRS for social, R&R and tribal welfare.

It is learnt from the coordinator of the Task Force that

important actions have been initiated by the Task Force as below :-

- Discussions with States in three pronged manner technical, bureaucratic and political simultaneously.
- Critical technical review of links for prioritization.
- Evolving a comprehensive terms of reference for preparation of DPRs through independent consultants.
- Evolving a desirable institutional/organizational set up for implementation independently through an Expert Body.

National Water Development Agency (NWDA) has prepared pre-feasibility studies for all the 30 links and feasibility reports for eight links. The Task Force has fixed milestones for ILR programme as below :-

- Complete feasibility studies December, 2005.
- Completion of DPR's December, 2006.
- Start Construction December, 2007.
- Completion of ILR Project December, 2016.

Prime Minister had announced that preparation of DPR's for two links namely Ken-Betwa, Parvati Chambal will be started by December, 2003. It is learnt that the investigation work on Ken-Betwa link has been started.

The ILR Project is a very large project estimated to cost nearly Rs.5,60,000/- crores (at 2002 price level) and technologically it is very much feasible and our country has got adequate technical expertise to execute this challenging project. The ILR Project must be taken up for implementation immediately and completed before 2025 AD. The river links must be taken one by one priority wise. Considering the urgency of demand for water and also economics. The schedule must be kept intact, any delay will cause acute suffering for people leading to intense conflicts due to water, which has already started in some parts of the country.

India is rich in technical manpower and skilled and unskilled labour is available in abundance. But unemployment is rampant.

Resources for development of water resources, inter linking of rivers, watershed development, water harvesting etc. are also available within the country. Therefore, there is need only to join both, i.e. resources and labour to get results. Then what are we waiting for ? We should act now and fast. The cost of the project for interlinking of rivers is Rs.5,60,000/- crores approximately. Somebody says we cannot have that much money, we cannot afford it. After all what is that cost. It is to be used for our own labour and on our own resources to create invaluable assets for survival of our people. Therefore there should be no difficulty in spending for it. For Golden quadrilateral project for highways to connect Metro cities, we are spending nearly Rs.80,000/- crores. We could afford this cost. We cannot afford to keep huge able bodied and minded people idle without employment. This is a crime on humanity.

Integrated Water Resources Planning, Development and Management (IWRPDM) must be adopted for optimum utilization of water resources in the country and also to know the deficits and surpluses in the availability of water at different places and time throughout the country. IWRPDM must be done now and completed within 2 or 3 years to dovetail the same with the National Perspective Plan. All the above said measures/means are required to augment water supply and its equitable distribution.

Demand side management is crucial. All efforts have to be made to save water and utilize water more efficiently. In agriculture and irrigation sector the water use efficiency or irrigation efficiency is required to be increased from the present level of 30 or 40% by adopting suitable measures in application of water to the fields. Instead of adopting age old technology of flooding the fields, drip irrigation, and sprinkler irrigation etc. if adopted, save substantial quantity of water. If pipes are used from the outlet in the canal to the fields for carrying water, seepage losses can be reduced. Advanced crop technology to grow more crop per drop of water will have to be used. Water saved is water created like power saved is power generated. More area can be irrigated and more people can be served by the same quantity of water.

In the domestic water supply sector, the sewage water can be treated and reused for horticulture and agriculture also For example, Delhi and Pune Municipalities adopt the same practice.

In the industrial water supply front, the waste water can be treated, recycled and reused eg. Bilt Paper Mills in Satara Dist. treats its effluent water and supplies the treated water for irrigation to the nearby fields. There the barren land has become fertile and two or three crops are grown per year. Therefore demand management is very important in scarcity conditions of water as we are facing today.

People's participation, especially women's participation is absolutely necessary for saving of water, economical use of water and preservation of quality of water.

'Polluter and user of water should pay' principle has to be adopted. Rivers and streams should not be converted into drains, as has been happening by letting into them untreated sewage. Sewage must be treated well and only harmless water must enter the rivers. We treat the rivers holy Ganga Maiya, Narmada Devi etc. but our actions of polluting rivers does not conform to our belief.

Use of chemical fertilizers and more of pesticides are also causing pollution of surface and ground water. Use of organic fertilizers is being emphasized by scholars. Can we do that, biotechnologists must come to people's help to do this. Composting of organic domestic waste will ensure getting good supply of organic manure. People need to be educated about this.

The message to conserve water, augment water supply and preserve quality of water has to be spread among the people to create mass awareness.

SESSION IV

HUMAN SECURITY

Chairman : S. Kulkarni
Main Speakers : Sanjay Baru
N. Jayaram

PAPER PRESENTED BY DR. SANJAY BARU

The term Comprehensive National Security is a hold all concept and so is that of human security. I have not heard any one speaking of energy security in this Seminar, even though the discussions have gone on so many directions. During the cold war, the focus and pursuit of the strategic planners was on two levels, the ideological level and the military power. The lesson learnt was that the Soviet Union collapsed due to internal contradiction, because the focus was only on military power and the social and economic aspect, the human development area was much neglected. There was hardly any room for meeting human aspirations.

China invested in competitive economy as well as in building up defence capability. It was realized that only defence was not enough. There was a need to look inward. Otherwise it could get caught in the syndrome in which the Soviet Union was caught. The result was China's miracle economy of the last century. It became the most powerful nation in Asia. China's defence expenditure as a proportion of its GDP was very high. Many believe that for achieving economic progress defence expenditure must be kept very low. But the experience shows that higher defence expenditure and economic growth go together. This happened in India during the nineteen eightees when the defence expenditure went up from near 3 per cent to 3.8 per cent of GDP. China is an excellent example. So are Malaysia, Thailand, Korea and some other countries. Defence and development are necessarily not opposites. They can be complementary.

I was a guest of Mr. Mahbood Haq, the well known Pakistani economist well known for the Human Development Index. He said that in the first three decades after independence, Pakistan was ahead of India, but by 1980s Pakistan started falling behind because

of high expenditure on defence and shrinking of expenditure on social development. He recommended scaling down of defence expenditure and indirectly tried to persuade India to do the same.

After the end of the Cold War, a new power equilibrium has come to stay. There are regional powers, but at the global level, the US is the Supreme Power. In Asia, we have China and India, in Europe, Germany and France, in Africa, South Africa and Nigeria. Military security threats in the present international security environment are unlikely. Hence many pose the question why spend so much on defence for us in India. We do not foresee a war with China, nor with Pakistan. But twenty years from now, or may be in ten years from now, our position is going to be seriously challenged by China. Much depends on how India steers her way onwards, on the quality of governance, on the quality and spread of education, on steps taken to accelerate agricultural, industrial and economic development, and on political stability. While waging a war outside, we should not have one on the inside.

National security covers a vast area, and it depends on national capabilities on many fronts, namely economic, technological, defence, diplomatic, industrial, agricultural, financial, trade etc. For measuring national power, one has to take into account national resources, agricultural, mineral, industrial, entrepreneurial, technological, financial and above all human resources.

China's concept as well as practice of comprehensive security is worth emulating. India had 2 percent of the world trade at the time of independence, and now it is 0.6 percent. Unlike India, China pursued a policy of external trade developing economic interdependence. The US investment in China is huge. So at any trade confrontation, China tells the US if you hurt us, you hurt yourself. And this sinks. India too needs to vastly expand its trade with the neighbouring countries and also with the major nations in the world and develop economic interdependence. China's policy has been to use interdependence as an instrument of diplomacy. Because of huge American investment in China, America has a vested interest in not allowing Chinese economy to go down.

India has a population of 1.04 billion. It is expected to grow to 1.5 billion by 2050. The huge population can be a great asset provided the people are well educated and competent and have a congenial environment to achieve their potential. But much depends upon the quality of governance in the country and on the polity.

PAPER PRESENTED BY DR. N. JAYARAM

In the final analysis, human security is a child who did not die, a disease that did not spread, job that was not cut, an ethnic tension that did not explode in violence, a dissident who was not silenced. Human security is not a concern with weapons it is a concern with human life and dignity.

United Nations Development Programme (1995: 229)

Introduction: The State and Security Concerns

Security is not a new concern; it is perhaps as old as the human beings themselves. The Utilitarian theory of the origin and nature of the state viewed the state as the protector of human beings and a guarantor of their security. Logically, according to this theory, the legitimacy of the state rests on its ability to secure the existence of human beings (that is, its citizens) who have reposed faith in its protection.[1]

Against what does the state protect its citizens and how does it do that? The answer to this two-pronged question implies the existence of the threat to the security of human beings. This threat is of two kinds. The human beings living under the protection of one state may be attacked, for whatever reason, by people who do not belong to it. The danger of such an attack from outside the boundaries of the state is termed the '*external threat*'. The state is entrusted with the responsibility of protecting its boundaries, territorial waters and air space against encroachment; it is endowed with the necessary authority for this purpose. The threat to territorial integrity, autonomy and political order has been the axial concern of the classical national security perspective.

However, human beings may also face threats from within boundaries of a state under whose protection they live. The danger of physical or psychological violence affecting the life of a people (life), of forceful dispossession of what rightfully belongs to them (property), or of violation of their belief systems and practices

(culture) within the boundaries of a state may be termed the '*internal threat*'. It is the state's responsibility to maintain the law and order, and it is endowed with the necessary authority for this purpose.

In brief, right from time immemorial the state has been entrusted with the twin security functions of maintaining the territorial integrity and autonomy against external threats, and the law and order against internal threats. For the effective discharging of these two functions, the state is endowed with the right to use legitimate force: To face external threats to security every state maintains a defence force consisting of army, navy, air force and para military forces. To face internal threats to security, every state maintains a police force and a law-enforcement machinery.

In the due course, and especially after the Industrial Revolution, and more so after the World War II, the scope of the state came to be enlarged so that either it became the director and regulator of economic development (in the so called 'command economies' of the socialist world) or as an enabler and overseer of development (in the so called 'free market economies' of the capitalist world). Economic development was, it came to be believed, the complement of security.

Rethinking Security

The turn of events in the closing decades of the twentieth century necessitated a re-look at the problem of security. The collapse of the Soviet Union was followed by the break-up of the Eastern Block and marked the end of the 'Cold War' era. On the ideological front, this signified the triumph of 'free market' economy over its 'socialist' counterpart. Politically, the formation and expansion of the European Union changed the map of Europe and redefined military concerns. Economically, the rise of China as an economic power, with its guarded move towards 'free market', and its admittance into the World Trade Organisation heralded an era of new possibilities.

Equally important has been the almost unstoppable

phenomenon of globalisation and the Electronic Revolution. Together with the fruits of Information Technology (IT), globalisation has been compressing both space and time. What has been conventionally regarded as 'boundaries' of the state are cracking up; in fact, the idea of the 'state' itself is becoming problematic. Expectedly, the tactics of war/defence have changed. The territorial conquest of the colonial kind has become *passé*, and it is being replaced by neocolonialism and cultural imperialism *via* the conquest of the market and the mind.

For the developing countries, which had to yield to the pressures of the international monetary institutions, treading the path of liberalisation and the adoption of the structural adjustment programme has meant the gradual withdrawal of the state from many spheres which it had hitherto ran, regulated or supervised. While one may not accept the extreme view that this is tantamount to the abdication of its responsibility by the state, it can hardly be gainsaid that almost in every developing country the state is shifting from its earlier 'welfare' concerns to the market orientation. Their international donors are advising these countries to rework their budgetary allocations by drastically slashing their defence expenditure.

It is in the context of the foregoing turn of events that the concept of 'human security' has come to the forefront, as different from the conventional preoccupation with 'national security' and as more specific than the earlier concept of 'security'.[2] More directly, the need for 'the human security perspective' grew out of the realisation in the 1990s that 'human security' is not coterminous with 'human development'. Obviously, there was no suggestion that there is no relation between the two, much less that human development is not necessary for human security. Rather, what came to be emphasised was that human development is a necessary but not a sufficient condition for human security. The two are, in fact, complementary.

The Concept of Human Security

Social scientist Lincoln Chen is credited with having coined the

term 'human security'. The first significant contribution to the human security perspective came from Mahabub ul Haq (1994), a developmental economist and a United Nations Development Programme (UNDP) consultant, who was a key figure in launching the Human Development Index. Human security became an essential concern for policy makers ever since the *Human Development Report 1994* emphasised the need for 'redefining security' to incorporate the 'human dimension' (see UNDP 1995).

While policy makers have adopted the term 'human security' as part of their vocabulary, social scientists, and particularly those engaged in policy studies, find the underlying concept woolly. Going through the literature on the subject, it is difficult to resist the conclusion that 'human security' is a holdall concept, which is difficult to operationalise. Not surprisingly, many a social scientist is sceptical about its use! Nevertheless, this concept sensitises us to two significant interrelated shifts in focus in the discourse on the state, development and security: (i) from the 'state' to the 'individual', from a juxtaposition between the state *and* the individual (or the state *versus* the individual) to the state *for* the individual, and (ii) from the macroeconomics defined 'development' to social welfare defined 'security'. These shifts in focus raise the following key questions: Security for whom? Security of or from what? Security by which means?

According to the UNDP, an analysis of the concept of human security must consider four of its vital characteristics (1995:229). They are:

(a) Human security is a universal concern. It is relevant to people everywhere, in rich nations and poor. There are many threats that are common to all people such as unemployment, drugs, crime, pollution, and human rights violations. Their intensity may differ from one part of the world to another, but all these threats to human security are real and growing.

(b) The components of human security are interdependent. When the security of people is endangered anywhere in the world, all nations are likely to get involved. Famine,

disease, pollution, drug trafficking, terrorism, ethnic disputes, and social disintegration are no longer isolated events that are confined within national borders. Their consequences travel the globe.

(c) Human security is easier to ensure through early prevention than later intervention. It is less costly to meet these threats upstream than downstream. For example, the direct and indirect cost of HIV/AIDS (human immuno-deficiency virus/acquired immune deficiency syndrome) was roughly $ 240 billion during the 1980s. Even a few billion dollars invested in primary health care and family planning education could have helped contain the spread of this deadly disease.

(d) Human security is people-centred. It is concerned with how people live and breathe in a society, how freely they exercise their many choices, how much access they have to market and social opportunities and whether they live in conflict or in peace.

Components of Human Security

Essentially, human security could be viewed as encapsulating two freedoms: 'freedom from fear' and 'freedom from want' (see UNDP 1995:230). The sources of the threat to these freedoms are a legion. Cataloguing these threats, the UNDP lists seven human security concerns. Table 1 provides a summary of these concerns. These are, no doubt, concerns which are universal in nature, as human security is under threat everywhere. All countries need to address them, though not in the same form or to the same extent. Nevertheless, it must be emphasised that the human security concerns are more imminent in the developing countries, and that the threats to human security are more in the case of certain categories of population such as women, children and the elderly and those living in rural areas.

It is clear from Table 1 that the concept of 'human security'

turns our attention away from the essentially defensive orientation of the conventional concept of 'national security'. More important, qualitatively, it is an integrative concept. Sociologically speaking, one could classify the seven human security concerns listed by the UNDP into four categories as follows:

(a) Economic: covering the livelihood and the survival of the human beings as biological organisms.

(b) Political, covering citizenship rights and people's participation in the making of decisions affecting their life, either directly or indirectly, immediately or in the near/distant future.

(c) Social, covering the institutions of family, community and the ethnic group, and the practices associated with these institutions.

(d) Cultural, covering the symbolic sphere of language, literature, art and religion.

The normative principle underlying these four categories of human security concerns is not the same. In the case of the economic and the political concerns, the normative principle is equality. In the case of the social and the cultural concerns, the normative principle is multiculturalism, as opposed to majoritarianism or the tendency towards the hegemony of uniformity.

The UNDP has identified six major threats to human security in the twenty-first century: (1) unchecked population growth, (2) disparities in economic opportunities, (3) migration pressures, (4) environmental degradation, (5) drug trafficking, and (6) international terrorism (1995: 234-36). We in India are already experiencing all these threats, and our efforts at handling them have been far from satisfactory.

Towards Operationalising Human Security

How do we know that our efforts at ensuring human security are

satisfactory or not? Obviously, we need to develop the benchmarks for each of the designated components of human security. Periodical auditing of performance in terms of these benchmarks would reveal whether we are making progress or not. As of now we do not have such benchmarks, and hence we are not in a position to state in categorical terms what progress has been achieved in human security or where have we faltered and how that can be rectified.

While developing the benchmarks for human security analysis, we should also keep in mind the problem of comparative analysis. As noted earlier, human security is a universal concern and we also need to know where we stand vis-à-vis other countries. In other words the benchmarks that we develop must take into account the parameters on which human security situation is measured internationally. That is, there appears to be a need for a Human Security Index on the lines of the Human Development Index developed by the UNDP. This, of course, is a task to be undertaken by an international organisation such as the UNDP.

The development of benchmarks for assessing the performance with regard to human security nationally, or the development of an index for comparing the human security situation internationally, is not an easy task. Apart from operationalising the key concepts and the development of indicators and values for the crucial variables, there is an important methodological problem to be addressed. Human security, defined broadly as encapsulating 'the freedom from fear' and 'the freedom from want', has two dimensions: the objective and the subjective. The objective dimension refers to the existing state of human security at a given point of time which can be measured independently of what the people think. The subjective dimension relates to whether the people think and feel that they are secure. These two dimensions do not necessarily coincide; they may and do vary independently. That is, those living under objectively better human security conditions may still subjectively feel insecure, just as those living under objectively worse human security conditions may subjectively feel secure. Obviously, 'human security' is a more complex concept for conceptualisation and operationalisation than 'human development'. Nevertheless, as a sensitising concept, it is worth being concerned about.

Table 1: Components of Human Security

Category	Concerns
1. Economic	- Unemployment, precarious work and increasing insecurity of incomes, absence of state financed safety net - Inflation eroding the value of nominal wages - Increasing poverty and homelessness - The breakdown of family/community support
2. Food	- Poor distribution of food and lack of purchasing power - Under-nourishment and malnutrition - Improved access to assets, work and an assured income
3. Health	- Infectious and parasitic diseases, linked to poor nutrition and an unsafe environment (polluted water) - Maternal mortality - Spread of HIV and AIDS
4. Environmental	- Environmental, water and air pollution - Deforestation - Environmental disasters - Rapid population growth and increased pressure on the land - Intensive industrialisation
5. Personal	- Crime and violence - Gender insecurity and violence against women - Child abuse and neglect
6. Community	- The breakdown of traditional institutions: family, community, ethnic group - Adverse impact of mass media on traditional languages and culture - Communal and ethnic tensions and violence
7. Political	- Repression by the state - Violation of human rights - Increased militarisation of the society

Source: UNDP (1995: 230-34)

Notes:

This is a revised version of the paper presented at the Seminar on 'Comprehensive Security: Need of the Hour' organised by the Centre for Advanced Strategic Studies, Pune on 25-26 February 2004. I thank Group Captain (Retd.) S.G. Chitnis, VSM for inviting me to this Seminar and the participants there for their valuable comments on my presentation. Thanks are also due to Ms Aparajitha Gangopadhyay of the Centre for Latin American Studies, Goa University for clarifying the concept of human security and sharing the necessary readings on the subject.

1. The Marxist theory, on the other hand, viewed the state as the handmaid of the ruling class, which helped the bourgeoisie (the capitalist class) in its exploitation of the proletariat (the working class). It posited the 'withering away of the state' in the wake of the proletarian revolution.

2. For a more extended analysis of the idea of human security, see James N. Rosenau (1995), David A. Baldwin (1997), Francisco Rojas Aravena (2002), and Kanti Bajpai (2003). For an analysis of human security concerns in South Asia, see P.R. Chari and Sonika Gupta (2003).

References:

Aravena, Francisco Rojas. 2002. 'Human Security: Emerging Concept of Security in the Twenty-First Century', *Disarmament Forum,* 2, pp. 5-14.

Bajpai, Kanti. 2003. 'The Idea of Human Security', *International Studies,* 40 (3), pp. 195-228.

Baldwin, David A. 1997. 'The Concept of Security', *Review of International Studies,* 23 (1), pp. 5-26.

Chari, P.R. and Sonika Gupta (eds.). 2003. *Human Security in South Asia: Energy, Gender, Migration and Globalisation.* New

Delhi: Social Science Press.

Haq, Mahabub ul. 1994. 'New Imperatives of Human Security'. Rajiv Gandhi Institute for Contemporary Studies (RGICS) Paper No. 17. New Delhi: RGICS, Rajiv Gandhi Foundation.

Rosenau, James N. 1995. 'Security in a Turbulent World', *Current History*, 94 (592), pp. 193-200.

United Nations Development Programme (UNDP). 1995. 'Redefining Security: The Human Dimension' (reprinted from *Human Development Report 1994*), *Current History*, 94 (592), May 1995, pp. 229-236.

CLOSING REMARKS BY THE CHAIRMAN

AIR MARSHAL S. KULKARNI

Ladies and gentlemen, we have had the benefit of very distinguished experts speaking on the subject of the Seminar backed by their long practical experience at the policy making and implementing level. The participants contributed their mite through very lively and animated discussion. I would like to thank all, Admiral J.G. Nadkarni for chairing the session and Shri Mangalmurti for his stimulating address. My sincere thanks to Dr. Bhushan Patwardhan and Shri M.G. Padhye for chairing the sessions and for their contribution to the Seminar. Sincere thanks are also due to Dr. Bharat Bhushan, Shri V.M. Ranade, Shri K.R. Subramanian, Dr. Sanjay Baru and Dr. N. Jayaram and above all, my thanks to all the participants who immensely contributed to making the Seminar so successful.

VOTE OF THANKS

Ladies and gentleman, we had a very stimulating discussion. The seminar has brought out number of areas which we have not touched in discussion. But these call for another Seminar as the subject is so vast. On behalf of the Centre I would like to convey my very sincere thanks to all the panelists, to Admiral J. G. Nadkarni, for chairing the inaugural session, and Shri M. K. Mangalmurti, for accepting to deliver the inaugural address to start the seminar. I must also thank Dr. Bhushan Patwardhan, Head, Deptt. of Health Science, Pune University, Dr. Bharat Bhushan, Professor, Yashada, Shri M.G. Padhye, former Secretary, Irrigation, Govt. of India, Shri V.M. Ranade, former Secretary, Irrigation, Govt. of Maharashtra, Dr. Sanjay Baru, Chief Editor, The Financial Express, New Delhi and Dr. Jayaram, Professor and Head, Deptt. of Research Methodology, TISS, Mumbai. Our thanks to all the participants for making this seminar stimulating and lively.

SUMMARY OF DISCUSSIONS

The subject of the Seminar, "Comprehensive Security : Need of the Hour" was too vast and too multi-dimensional to be adequately covered in one Seminar. Some important core elements like environment security, ecological security, water security and human security were well presented by the main speakers. The general discussion was animated and lively. At the end a general consensus emerged on the following lines :-

- National Security is a comprehensive concept embracing social, cultural, political, economic, industrial, science and technology, diplomatic and military matters.

- India's environment and ecological security has been endangered due to wreckless large scale deforestation, excessive use of chemicals and fertilizers, rapid urbanization and improperly planned industrialization. This is affecting the nature's significant and valuable gift of great biodiversity to the country. It is also affecting the ecological balance.

- Water security has now become a problem and is going to become worse in the next couple of decades unless urgent steps are taken to augment available water resources, to conserve what is available and to optimize utilization.

- Water planning, and water management should be people centred instead of only bureaucracy centred.

-Stern steps are necessary to arrest water and environment pollution.

-Interlinking of Rivers project is a crying need to ensure equitable distribution of water and to ensure optimum utilization of available water.

-Terrorism on a global scale is a serious threat to national security and needs to be effectively handled and countered, wherever necessary, with a human face.

-Human security interlinked with human well being is vital for national security and calls for top priority handling with compassion and sensitivity.