

DBHEI Webinar Edition 2

FACULTY ENRICHMENT WEBINAR -Edition 2

Session	Questions	Answer
<p>Dr. R K Purakayastha <u>(Session-1)</u></p>	<p>What will be some significant measure for India to address the India-Nepal border dispute?</p>	<p>Thank you for the question.</p> <p>I have already touched on this issue. India needs parity in its development process, at present the southern, western and some northern states are more socio-economically developed in comparison to the rest. Central and Eastern Indian states are slow in the economic development process, if we want inclusive development we need to prioritize creation of human capital in the underserved states, for this we need good colleges, universities research centers etc, These are possible with proper investment and infrastructure development in these states. There is need for policy intervention to attract FDI in the underserved states. An overall business environment needs to be created in these under-developed states. The Niti Ayog's Innovation Index Report 2019 is already available which gives a road map of how parity in development process can be reached spatially. This in turn will help in reducing the gap between rich and poor in society.</p> <p>The Eastern and central states are blessed with fertile soil and mineral resources, growth of entrepreneurs in agriculture and manufacturing sectors should be encouraged. Agriculture needs attention and should be made more profitable, At present we give too much of weightage to the service sector, manufacturing sector needs to be encouraged equally. Make In India is a good scheme where we can attract foreign multinationals to produce goods in India. This will generate jobs across states. The Lesser developed states needs to encourage Foreign Investors for which certain incentives can be provided by the states. The less developed states also needs to create a business friendly environment and provide security. There is need for value addition to the agricultural goods and the minerals. e.g.. At present Meghalaya export lime stones to Bangladesh but hardly manufactures cement and Bangladesh exports cement back to India. This practice needs to be discouraged the states producing the raw materials can also emerge as the manufacturing hub centered on the raw materials which will not only generate more wealth with value addition but also provide employment opportunities.</p> <p>Intervention is necessary to provide better housing and access to amenities to the migrant labour force in the cities. All the migrants should be registered and have access to basic health checkups and quality</p>

		<p>treatment at nominal costs, minimum wage, proper working hours etc should be provided by the employer/Laws to check exploitation of the migrants needs to be implemented strictly with stringent punishment to the violators. The central Government has already promised to look into it and these laws needs to be implemented. Hostility towards the migrants in the big cities and developed states needs to be discouraged and schemes addressing better livelihood opportunities should be provided to the urban poor.</p> <p>Above all proper data on internal migration and its dynamics should be provided by different agencies so that in case of any crises the administration need not be caught un-aware. Skill enhancement and soft loans can be provided to the migrants, but at the same time better opportunities in education/ skill development, health facilities, employment opportunities should be encouraged in the migrant sending areas viz. rural and less developed states. This only can lead to a prosperous inclusive developed India.</p>
<p>Dr. Shantu Saikia (Session-2)</p>	<p>Respected Dr. Shantu Saikia will the use of rice cooker, boiler, ovan and other electrical kitchen Ware will also produce electro pollution?</p>	<p>Any electrical appliance do produce electromagnetic radiation. And the devices like rice cooker and boiler will produce extremely Low Frequency (ELF) Electromagnetic radiations of frequency in the range 50 – 60 Hz. However in case of a Microwave Oven, the technology is different. They generate Microwaves which are a type of EM waves with a frequency of around 2.45 GHz. We have been using electrical appliances for ages now and these radiations have been there in our homes. But with the advent of mobile and other wireless devices, the amount of electromagnetic energy levels in and around us has risen to very high levels making it a thing of concern and is now being considered as a type of pollution.</p>
	<p>Electro magnetic pollution may be the cause of increase in Alzheimer's disease in present day. What is your view on this?</p>	<p>Alzheimer's disease is a neuro-degenerative disease in which the brain cells progressively degenerate and die. The exact cause of this disease is not fully understood till date and scientists believe that there may be a combination of many factors resulting in this disease. It may be genetic, lifestyle related or environmental.</p> <p>The human brain contains about 120 billion neurons on an average and they work by constantly sending and receiving information among themselves. And to a Physicist, these are electrical signals. Just as we have spectrum allocations for different communication networks, human brain too, operates within a frequency spectrum of 1 Hz to 100 Hz. The waves generated in the Human brain are categorised into the following four types Delta, Theta, Alpha and Beta waves, depending on their frequency. So if low frequency Electromagnetic radiations enter our brain, and its frequency coincides with the frequency of the brain waves, there is a definite chance of them interfering with the signaling mechanism of the neurons.</p> <p>Lot of studies have been reported in existing literature on the possible impact of Electromagnetic Radiations on the nervous system. As the question being raised is with respect to Alzheimer disease,</p>

I am noting down the results of a few of the references that I have come across “**As Reported**”. Though I am sure, many more are there.

1. The inability of neuronal cells to divide and repair once damaged makes the organism susceptible to develop several neurodegenerative diseases. The occurrence of Parkinson’s disease, and so forth, has been linked to cumulative DNA damage in brain tissues [**L. Phillips, N. P. Singh, and H. Lai, “Electromagnetic fields and DNA damage,” Pathophysiology, vol. 16, no. 2-3, pp. 79–88, 2009.**]. The increased prevalence of Alzheimer’s disease reported among workers of textile factories exposed to ELF-Mfs [**E. Sobel, Z. Davanipour, R. Sulkava et al., “Occupations with exposure to electromagnetic fields: a possible risk factor for Alzheimer’s disease,” American Journal of Epidemiology, vol. 142, no. 5, pp. 515–524, 1995.**]

2. In another research, a single two-hour exposure to a cell phone, just once during its lifetime, permanently damaged the blood-brain barrier and, on autopsy 50 days later, was found to have damaged or destroyed up to 2 percent of an animal’s brain cells, including 13 cells in areas of the brain concerned with learning, memory and movement. It is known that this barrier is damaged in Parkinsons disease and in Alzheimers dementia. So there is a risk that disruption of this protection barrier may damage the brain. [**Salford, Leif G et al., Nerve Cell Damage in Mammalian Brain After Exposure to Microwaves from GSM Mobile Phones, Environmental Health Perspectives 111, 7, 881–883, 2003.**]

3. Various studies show that exposure to EMR reduce melatonin levels in people [**Wilson, B.W., Wright, C.W., Morris, J.E., Buschbom, R.L., Brown, D.P., Miller, D.L., Sommers-Flannigan, R. and Anderson, L.E., ‘Evidence of an effect of ELF electromagnetic fields on human pineal gland function’, Journal of Pineal Research, 9, 259-269, 1990**]. Melatonin protects the brain against damage leading to Alzheimer’s disease; hence degenerative diseases such as Alzheimer’s and Parkinson’s disease as well as cancer have been linked to suppressed melatonin production in the body.

4. Exposure to electromagnetic fields has shown to be in connection with Alzheimer’s disease, motor neuron disease and Parkinson’s disease (**WHO ELF Health Criteria Monograph 2007**). All these diseases are involved with the death of specific neurons and are classified as neurodegenerative diseases. An increased risk, of about four times for Alzheimer’s disease has been reported for those exposed to Extremely Low Frequency (ELF), EMRs [**Håkansson N, Gustavsson P, Johansen C. Floderus B, Neurodegenerative disease in welders and other workers exposed to high levels of magnetic fields. Epidemiology, 14, 420-426, 2003**].

IN CONCLUSION: There are definite indications of the link between neuro-degenerative disorders like Alzheimer’s disease and exposure to EMRs. However studies are still going on and because of the complex interaction and dependence on various other factors, a conclusive inference cannot be drawn.

Sorry for making the answer too long and technical. But it was needed to establish a conclusion.

<p>Dr. Subrata Purakayastha (Session-3)</p>	<p>Apart from family planning, Ma'am can you suggest some other measure to address the mismatch between economic development and population in India?</p>	<p>Thank you for the question.</p> <p>I have already touched on this issue. India needs parity in its development process, at present the southern, western and some northern states are more socio-economically developed in comparison to the rest. Central and Eastern Indian states are slow in the economic development process, if we want inclusive development we need to prioritize creation of human capital in the underserved states, for this we need good colleges, universities research centers etc, These are possible with proper investment and infrastructure development in these states. There is need for policy intervention to attract FDI in the underserved states. An overall business environment needs to be created in these under-developed states. The Niti Ayog's Innovation Index Report 2019 is already available which gives a road map of how parity in development process can be reached spatially. This in turn will help in reducing the gap between rich and poor in society.</p> <p>The Eastern and central states are blessed with fertile soil and mineral resources, growth of entrepreneurships in agriculture and manufacturing sectors should be encouraged. Agriculture needs attention and should be made more profitable, At present we give too much of weightage to the service sector, manufacturing sector needs to be encouraged equally. Make In India is a good scheme where we can attract foreign multinationals to produce goods in India. This will generate jobs across states. The Lesser developed states needs to encourage Foreign Investors for which certain incentives can be provided by the states. Theless developed states also needs to create a business friendly environment and provide security. There is need for value addition to the agricultural goods and the minerals. e.g.. At present Meghalaya export lime stones to Bangladesh but hardly manufactures cement and Bangladesh exports cement back to India. This practice needs to be discouraged the states producing the raw materials can also emerge as the manufacturing hub centered on the raw materials which will not only generate more wealth with value addition but also provide employment opportunities.</p> <p>Intervention is necessary to provide better housing and access to amenities to the migrant labour force in the cities. All the migrants should be registered and have access to basic health checkups and quality treatment at nominal costs, minimum wage, proper working hours etc should be provided by the</p>

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