NATIONAL SEMINAR ON

"Emerging Need of Integrated Multidisciplinary Research: Leveraging Social and Cultural Resources of North-East India to Scientific Innovation and Knowledge Economy"

to be organised by

North-Eastern Hill University, Shillong

on

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under the aegis of

Shiksha Sanskriti Utthan Nyas, New Delhi

&

Indian Council of Social Sciences Research, New Delhi

Concept and Objective of the Seminar

1. *Concept Note:*

India, one of the world's largest economies, is a land of enormous natural resources, manpower, outstandingly potential markets, vast and resourceful Diaspora for global linkages and networks, and above all, abundance of exceptionally talented individuals. India's tremendous progress is laudable as a major global Research and Development (R&D) platform with a large number of multinational corporations running more than hundred R&D centres. Inspite of the country's brilliant features in development replete with rapidly expanding industry academia collaboration, increasing number of world class higher and technical institutions run by industries, impressive number of public and private research organisations, eminently functioning research institutes, corporate organisations and manufacturing companies, frequently updated prudent reform measures etc., the country still ranks fifty -second, a bleak position, in Global Innovation Index (GII) among 129 countries in the recently (2019) released GII rankings, annually published, computed based on 80 innovation indicators, by Cornell University, INSEAD and the UN World Intellectual Property Organisation (WIPO) and GII Knowledge Partner. Of course, it has improved impressively in the last one decade from 109th rank in 2012. China ranks 14th position in the same GII (2019) ranking - much ahead of India. An unsettled lacuna that is still lurking in the system hindering the quest of becoming dynamic hub of innovation is perceptible. Critical enquiry into the policy reforms and scientific evaluation of mechanism of implementation, from the perspective of pragmatism, are a need of the hour.

Reform measures mainly focus on enhancing gross enrolment ratio, resolving access problem of people from geographically, socially and economically skewed to higher education institution, promoting global destinations for research and innovation, elevating more Indian academic institutes to be among top global universities, improving research and innovation ecosystem, regulating effective accreditation mechanism, enhancing skill and employability etc. But, still our premier world class institutes like IITs, IIMs, IISc, etc, cannot

get a place among the top 200 Global universities. NASSCOM (2012) reveals that one fourth of our engineering graduates and 10% of other graduates are employable. A survey states that only 2.3% of our workforce is skilful, whereas 80% is for Japan, 96% is for South Korea, 75% is for Germany, 68% is for UK and 52% is for USA. The picture shows the dismal performance of India in research and innovation and hence the nation remains backward in the preparation of human resource and production of human capital. On the other hand, all the draft policy guidelines or frequently undertaken reform measures seem quite impressive in comprehensively addressing all the pertinent issues of social, economic and technological development in the country.

But, the sad reality is that in Indian universities, researches are by and large individualistic and restrictive in a particular area or discipline. Researchers like PhD scholars, faculty members and also those working on research projects are made to seriously think for enhancing API by publishing more papers; the recruitment and promotion rules laid down by the UGC create a situation that people's heart and mind are one-sidedly trapped in fear psychosis of difficulty in getting job and protecting job career, they are bound to keep themselves extremely busy in the rigorous and rush work of making adequate number of publications for promotion within constraint of time due to fast approaching retirement age. Ultimately, the education system itself becomes responsible for producing community of job seekers rather than resource creators, so to say, job creators. On the other hand, researchers in the developed countries, particularly socially, economically and technologically advanced ones, come together to coordinate or integrate their works that lead to product either patentable or an asset of the country giving social or economic or technological value. The researchers in the West, China and Japan are putting their skills together to develop new invention or innovation in various fields. For example, researchers in medicine collaborate with researchers in mathematics, statistics, computer science, and social science so that their combined work is worth for patent filing and working. Thus universities and academic institutes directly contribute to socioeconomic and technological development of the country. Universities and other academic institutions embarking upon commercial ventures in collaboration with corporate and industry contribute to active academic technology transfer to provide support and benefits to public, and add in knowledge economy or asset of the country; far more than that, the university can undertake research in much larger extent not only in science, technology and innovation but also in solving malicious social and political problems, and linking different cultures of the world. So to say, researches in university must not be limited and oriented to business monopoly of corporate houses, greater ideas or deepening innovations of diverse disciplines of university can merge together into a beneficial entity - a product that gives social and economic value. But in India, researches are mostly exploited more for individuals' professional growths rather than country's growth. Time has come for India to critically evaluate the results of resources invested on education and research.

2. *Objective of Integrated Multidisciplinary Research (IMR) for Knowledge Economy*:

In the field of knowledge economy, India's share in global patenting is small, as GII rank has shown, the researches in India are too weak to turn it into profitable applications. As per report of world bank, 70% of R&D is performed by central and state governments, an

additional 27% by enterprises (both public and private sector industries), and more or less than 3% by universities and other higher education institutions, whereas, in developed countries, universities, too, undertake research to a much larger extent and thus are instrumental in building strong linkages with corporate world. In India, the very ethos that innovations emerge from university system and are adopted by industry has been seriously neglected in creating policy mechanism except giving its place in the rhetoric.

The aim of IMR is an unambiguous concept. Innovations should be transformed into new products or improved products. Under this system, research must be clearly product based. It aims at increasing patented invention on a commercial scale too. Researches which are not aligned to creating robust mechanism for the transfer of knowledge and innovation from higher education system to economic system or functioning patent system do not enrich values of knowledge and ideas on which knowledge economy flourishes. The actual growth of the country depends upon working of patents to encourage innovation to its desired destination.

Keeping the above discussed issues in the background, we propose to introduce IMR in the universities of the north-east India; IMR must revolve around the following points.

- ☞ Patentable innovations through conceptualisation of cutting edge research in all possible fields.
- ☞ Leveraging traditional knowledge with modern science and exploiting public private partnership in reverse technological innovation in agriculture and health practices that were developed for centuries, incorporating knowledge, skills, practices based on beliefs and experiences of indigenous cultures in north-east India to add up to knowledge economy of the region.
- ☞ Converting innovations into viable business plans, disseminating knowledge of indigenous innovations especially for job creation.
- ☞ Tapping knowledge from fast changing dynamics of global knowledge economy and disseminating it within the country for gearing up social and economic development and maintaining the speed of technological innovation to keep pace with that of advance countries. One of the potential problems of India is that India misses opportunities cause of lack of speed and intensity in innovation; in knowledge economy, things become obsolete soon because of tough competitions in global markets.
- ☞ To work for grass root level innovation for providing support to villages in terms of social and economic development.
- ☞ Understanding root cause of social problems and finding solutions.
- ☞ To create a research direction in regional languages/Socio-cultural roots of north-east with science.
- ☞ To conjoin diverse disciplines at one platform for academic research; the target is to benefit of society.
- ☞ To find the real life applications of scientific technology for benefit of north-east people.
- ☞ To preserve traditional ecological knowledge of north-east.
- ☞ To safeguard linguistic bio-diversity of north-east, knowledge generation and creativity in local language.

- ☞ To document minor, neglected languages of north-east.

3. ***Working Model of Integrated Multidisciplinary Research***:

Persons, who have credible expertise in research in their own domain/discipline or are experienced in productive research in multiple disciplines, have to take part in such interdepartmental or multidisciplinary collaborations.

Professional researchers from at least three or more departments or disciplines or schools must join hand by merging their original ideas, whether new or improved, out of their research skills and hence produce a single research proposal which meets the prescribed standard in the form of either making product or patentable innovation - appropriate for creating asset of the country and adding to scientific, technological, social and economic value. The partnering researchers must come up with broader outlook, free thinking and innovative zeal to collaborate; they have to initially face a tough challenge of conceptualizing a single research proposal/entity through the integration their shares of skills, expertises, new ideas or improved ideas. Once such a proposal is made, its acceptability as per their collective claim/justification, in conformity with the goal of IMR, must be examined and approved by competent authority/expert group.

Time frame for conducting and accomplishing the proposed research work must be reasonably worked out by the partnering researchers. Research parks and laboratories of various departments, which are deemed required, may be shared freely and fairly under a properly framed regulatory system.

The researchers should be reasonably and attractively compensated till the completion of their work from any funding agency such as NRF (National Research Foundation) or any suitable appropriate funding agency. Liberal compensation to such researchers will surely help in nurturing the culture of research for knowledge economy of the country; it may also set off a competition in research leading to product.

4. ***Appeal to Prospective Participants/Paper Presenters/Resource Persons***

The seminar aims at providing a common platform to bring together young as well as experienced researchers, professionals in various fields of research and innovation, academics, academicians, practitioners whose deliberations at this multidisciplinary academic and society bonanza are expected to help in enhancing the quality of research and useful for society in the country. The seminar is intended to have a lot of activities like keynote address, plenary talks, invited talks and postal presentation on the mechanism, modalities, strategy and significance of the proposed IMR. The eminent scholars of different academic, industrial and management fraternities are invited for deliberating on the issue elaborately discussed above. Paper presenters may prepare papers on the feasibility of IMR or on any of the focussed points/areas mentioned in the clauses of section 2, of the IMR. Besides, the seminar may be designed based on interest and theme of the concept of multidisciplinary group research.

The theme of the conference vary from various subjects across diverse disciplines, including aspects from Science and Technology, Zoology, Botany, Biochemistry, Biotechnology, Bioinformatics, Chemistry, Physics, Mathematics, Statistics, Bio-medical Engineering, Information Technology, Nanotechnology, Social Science, Economics, English,

Linguistic, Hindi, Khasi, Sanskrit, Geography, Anthropology, History, Political Science, Law, Library Science, Commerce, etc.

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