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All India Peoples Science Network (AIPSN) Response

On the draft STIP2020:

Need for a people-centered and future-oriented STIP based on reality

1. During the ongoing pandemic, the [Science Policy Forum](#) and [Department of Science and Technology](#) initiated a series of discussions in different tracks to discuss various parts for formulating a draft STIP2020. On Dec 31st [a draft was released in English online](#) and a feedback response date of 25th Jan was given. Two days before the date, the deadline was [extended to 31st Jan](#).

2. In the economic transformation of Japan, South Korea and China their policies relating to Science, Technology and Innovation played a significant role in these countries' development with advanced capabilities in technologies of the second and third industrial revolutions, poised to also develop such capabilities in 4th generation technologies expected to dominate the global economy over the next two decades. Several other Asian countries such as Singapore and Taiwan have also developed advanced manufacturing capabilities and know-how. **All these nations have followed what we may broadly call a self-reliant pathway in S&T, consciously investing in developing their own knowledge, industrial and human resource capabilities over the years, as against depending on “Western” MNCs or companies for this.** In [the Global Innovation Index](#) China now a rank 14th for the 2nd time in a row and remains the only middle-income economy in the GII top 30. India is at the 48th position. This follows the consistent **growth of [Gross Expenditure on R&D \(GERD\) with respect to the GDP](#)** in the case of China that grew from 0.6 in 1996 to 2.2 now, while in contrast **India has remained hovering around 0.6 since 1996.** GERD of the “Asian Tiger” economies follows a similar trajectory. It is also important to highlight the fact that China has used [per capita GDP as a metric](#) to measure its progress, thereby placing emphasis on the share of its working population in growth, rather than just GDP as India and many other countries do.

3. The biggest weakness of draft STIP 2020 is that **the policy is not rooted in the economic and industrial scenario of the country**, and the direction in which these are visualized to transform over the next, say ten to fifteen years. Without such a vision, draft STIP2020 is cast in a vacuum. Further, the draft STIP2020 does not take cognizance of the present state of Science, Technology and Innovation in India, and put forward a policy that starts from where we are and leads to where we want to go. Similarly, the suggestions proposed do not also reckon with the institutional and systemic weaknesses or strengths. In this context, the very feasibility and utility of the draft STIP2020 are open to question, however nice this or that proposal sounds. Incidentally, [STIP 2013](#) envisioned positioning India among the top 5 global scientific powers by 2020. Do we then presume that India has achieved that and now moves towards the top 3?

4. A well thought out and designed policy that is sensitive to the needs of not only the people of India but of the world can make a tremendous difference. However, **for inclusive and sustainable growth, it is important to first chart the practical steps for effective implementation of S&T policies.** Such an approach is needed for balanced and integrated development taking into account the social and environmental aspects. In order to do this, it is important to first ensure the penetration of basic infrastructure of roads, electricity, communications and internet, water, public health, education and skills, to all parts of the

country. Just as India's R&D expenditure has historically been miserably low, so too has India's investment in the health and education of the majority of its population and potential work force. No less is the importance of a federated approach to take into account the geographical and developmental diversity amongst the States and Union Territories of India. A rigid one shoe fits all approach will not be useful. There has to be inbuilt flexibility in terms of structures, funding and implementation considering the developmental and infrastructural variations in different regions.

5. The draft STIP2020 is **not an authentic national STI policy**. At best, it is like a policy for the Department of Science and Technology (DST). **A transformational STI policy needs to bring on board all the government departments of the union Government, the state governments and the public in a collaborative mode** for the formulation of STIP 2020 draft.

6. The vision of the policy as mentioned "*to build individual and institutional excellence in STI with the aspiration to achieve the highest level of global recognitions and awards in the coming decade*" is completely flawed. **One cannot have a national policy based only on awards and recognitions:** if India does outstanding science and develops novel advanced technologies, awards and recognitions will follow. As the [Nobel Laureate Venkatraman Ramakrishnan has said "Science flourishes when people are free to question authority"](#). But that cannot be built into a policy. It is an academic, research and society-wide culture and part of the scientific temper which is encouraged by our Constitution.

7. The draft policy keeps referring to **undefined Traditional Knowledge Systems** and in one place links it with heritage. This along with references to **undefined grassroots innovations is in dissonance with the vision to position India among the top three scientific superpowers in the decade to come**. However, highlighting these in the draft STIP2020, in the context of what is currently being done in India under the rubric of these terms, does pave the way for significant funding for spurious and inefficacious efforts, often pulling in an opposite direction to the desired future-oriented STI.

8. The draft STIP2020 is astonishingly **filled with a plethora of new Institutions and Funding Schemes:** the Capacity Building Authority, the STI Policy Institute, the overarching Strategic Technology Board, a Strategic Development Fund, a national STI Financing Authority, an STI Development Bank, the national STI governance mechanism, the National STI Observatory, Indian Science and Technology Archive of Research (INDSTA), Advanced Missions in Innovative Research Ecosystems (ADMIRE), a centralized database on all forms of Financial Incentives, and Inter-State Science, Technology and Innovation Council (IS-STIC). **While it is necessary that funding mechanisms be centrally coordinated, the structural framework along with the control structure also needs to be decentralized in order to take into account the spirit of cooperative federalism envisaged in the Constitution of India.** These numerous new Institutions would only lead to additional bureaucratic structures in an already top-heavy science administration, draining even more funds from actual research. There is also no point creating new institutions and funding schemes without examining the problem of non-functioning or malfunctioning of existing ones. It is ironic that these suggestions for new Institutions come at a time when the government is engaged in closing down many S&T Institutions and driving them to raise their own funds, therefore reducing the amount of research done, showing again how distanced the draft STIP2020 is from ground realities.

9. The draft STIP2020 talks of attracting Foreign Direct Investment (FDI) in STI, reduction in corporate tax rates for foreign MNCs, fast track clearances, easing land acquisitions, adequate means for incorporating FDI etc. to be explored on a need basis. This is definitely detrimental to public sector research in agriculture aiming to strive for food self sufficiency, security and especially nutritional security. Self-reliant STI can certainly not be built through FDI or by foreign MNCs who may manufacture in India but will not transfer technologies as experience hitherto has amply shown. Experience of Japan, S.Korea and China is exactly the same: they embarked on a self-reliant path precisely because MNCs and Western companies will never part with their technologies, since they know full well that it is knowledge and technology, which controls industry and the economy. **This is yet another cardinal mistake in the draft STIP2020; following the present Governments idea that manufacturing in India by foreign companies/MNCs directly or through FDI in junior Indian partners, is also “Make in India” and also represents Atma Nirbhar Bharat.** Nothing could be further from the truth. The draft STIP2020 is extremely permissive to imports, and by this route it plans to achieve " Atmanirbhar Bharat" and India's emergence as the third global power in STI! And for that, science is now given a new role: "S&T for diplomatic benefits" and "diplomacy for S&T development"! In this draft STIP2020, the Indian Diaspora are to serve as conduits in the mercantilist exploitation of science, in which India's intellectual resources, like her scientists, will be the basic inputs in this Atmanirbhar Bharat's Global Assembly Line.

10. The long-term and continuing **reluctance of the private sector in India to invest in R&D** is notorious but **is not meaningfully addressed in the draft STIP2020**. Much of this is due to Indian corporates' preference to take the easy route of foreign collaboration or technology imports repeatedly incentivized by industrial and taxation policies of successive governments, even further promoted by the current emphasis on FDI as the major engine of industrial and technological development. Minor policy incentives or inducements will not change this, and a thrust for genuine self-reliance is a must.

11. The draft STIP2020 also provides an escape clause for the Central Government from the need for enhanced investments in R&D by proposing that all other stakeholders such as State governments, PSUs, SMEs, private sector, Universities, Research Institutions and so on would be required to set aside earmarked funds for R&D. This is **a futile and sub-optimal exercise and would only lead to ineffectual “R&D” on paper, merely to satisfy some bureaucratic requirement.** In the absence of mission-oriented R&D programmes at scale, the goal of transformative R&D to take India into a leading position in the 4th industrial revolution would remain a pipedream.

12. There is **no meaningful discussion of employment in a potentially changed capital and technology-intensive industrial scenario**, and how the draft STIP2020 proposes to address this issue. There is therefore no mention of the working people, farmers, workers, migrants, unorganized workers, rural unemployed and under-employed. Nor is there any indication of how the STI is going to benefit and take them along in the process of inclusive and sustainable growth. **This begs the question as to who this draft STIP2020 bell tolls for?**

13. Another big miss in the draft STIP2020 is **the absence of addressing societal goals that can be targeted through S&T and by promoting scientific temper**, issues that were emphasized in the [Scientific Policy Resolution 1958 \(SPR1958\)](#). Even in its mention of the SPR1958 document, the draft STIP2020 does not mention these aims of the SPR1958 and limits itself to stating that “*S&T were seen as vehicles for the onward journey towards socio-economic transformation and nation building*”. The role that S&T can play in alleviating hunger (India stands 102 among 117 countries in World Hunger Index), combating disease, ensuring health, hygiene, housing, employment and **making the reach of science equitable are not addressed at all** in the document.

14. The draft STIP2020 is anything but what it says: “*It is to be noted that the new STIP policy revolves around the principles of being decentralized, evidence-informed, bottom-up, experts-driven, and inclusive.*” There are a lot of **hollow claims of producing an evidence-driven, inclusive and bottom-up policy process** steered and coordinated for the well being of the nation and its people with socio-economic and environmental considerations. The rambling draft policy makes all the right noises but lacks foundations of reality making it a catch all bucket list which without the grounding will remain wishful thinking. It is essential to cut the fluff and make it lean but meaningful.

15. A major appreciative aspect of the draft STIP2020 is the very mention of LGBTQ+ and all that follows. But again it is **dampened by the lack of specifics and arriving at how the changes can be made**. The other aspect that is appealing is the talk of Open Science but the sheen is lost, due to not trying to figure out why it has not progressed, as needed, so far.

16. The importance given to Science Communication is welcome, but it is disappointing to see the stress on scientists rather than on imbuing the lay citizen with scientific temper, critical thinking and the world view of science. It is puzzling that, rather than acknowledge and build upon the existing almost [40 year old people’s science movements in the country](#) committed to and involved with activities towards this goal; this policy glibly seeks to “create” new science movements. Civil society organizations should be left to themselves and supported, but **government-created “science movements” would be self-defeating and work against developing critical thinking which often requires looking at governmental S&T policies with a critical eye**.

17. The STIP will affect all sections of the public and, as mentioned in the draft STIP2020, it is meant to be inclusive. Moreover, it also intends to make science literature available in all languages and geographic regions. So **a good starting point will be to make the draft STIP2020 available in all the Scheduled languages in the Constitution of India** so that the public including researchers at all levels **can meaningfully understand and discuss** it to come forward with suggestions.

18. There is **no particular urgency to have the STIP brought out within the coming months especially in the time of the pandemic**. It may therefore be a good idea to revise the Draft in a transparent manner taking into account comments received, and the revised STIP then placed before parliament allowing for scrutiny by the Parliamentary Standing Committee on S&T.

*AIPSN demands for transforming the draft STIP2020
into a people-centered and future-oriented STIP based on reality:*

- a) The draft STIP2020 be made available officially on the website in all the Scheduled languages and propagated through social media and TV. After that is made available at least two months period should be given for wide dissemination and involvement in discussions.
- b) There should be a provision for giving feedback through hard copies also apart from only online as online access is still limited in the country. One contact person should be mentioned to ensure that the hard copies will be received correctly.
- c) All the suggestions received, as hard copies and online, must be put into an indexed publicly available online database so that there can be cross checking about incorporation in the STIP.
- d) The draft STIP2020 has to reduce the rhetoric and make it more realistic
- e) The NEP has not been debated in the Parliament. Therefore, endorsing or linking NEP in sections of the STI is not democratic. It is important to involve the Parliament in the STI through *formation of a Parliamentary Standing Committee for STI*. This is also one of the recommendations by UNESCO for countries to democratise the STIP.
- f) The many structures that are envisaged in the STI need to be decentralised, not in funding but in functionality and structure, taking into account the cooperative federalism which is the spirit of the Constitution.
- g) The four decades old popular science movements and some even older science popularization organizations in the country need to be acknowledged and built upon rather than artificially “creating” new science movements to act at the behest of the government.
- h) There were only limited online attempts to involve or seek the opinions of the wide thriving S&T community in the country. There needs to be more engaged consultations with such S&T communities distributed across the country to evolve this national policy.

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