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Innovate in India

After Isro, Indian technological prowess must shine in other sectors



In a scientific feat, the Indian Space Research Organisation (Isro) successfully launched a record 104 satellites into orbit at one go, shattering the previous Russian record of 37. The total payload included India's 714kg Cartosat-2 and 103 nano satellites – two Indian, 96 American and one each from Israel, Kazakhstan, the Netherlands, Switzerland and UAE. The significant foreign cargo exemplifies Isro's excellent stock in the satellite launch market.

Isro's cost-effective and reliable satellite launch model, among its other achievements, is certainly reason to conclude that the space agency represents the best of India's scientific prowess. The problem, though, is that such technological excellence is rarely visible in other sectors. From consumer goods to defence, the presence of successful Indian products and innovation is minimal. Even in the premier IT sector, Indian companies mostly excel at providing services to foreign clients rather than creating cutting-edge IT products. This lack of inventive spirit bodes ill for a country that wants to emerge as a global knowledge and technology hub. It may be true, but has now become passe, to state that China is the factory floor of the world while Indian manufacturing is limping along. The point is that even in areas such as design, technology, innovation and scientific patents China has powered far ahead of India. This is the result of an Indian system that prefers bureaucratic red tape to merit or innovation. While private sector companies may have a better work culture than public sector organisations in India, they invest very little in R&D. Our premier technical institutes such as the IITs are best known for their undergraduate students rather than cutting edge research. Heavy-handed regulation of India's educational institutions has also stifled creativity and innovation. It's being said that America doesn't produce enough STEM (science, technology, engineering, math) graduates of its own and will need to rely on Indian talent, President Donald Trump's disinclination to admit foreigners notwithstanding. But why does Indian talent need to be married to American institutions to succeed? If we have the talent, why can't we have the institutions, thereby benefiting India rather than America? Isro may be one such institution but India needs many, many others. In that sense, as Mukesh Ambani has suggested, Trump may be a blessing in disguise if he prompts India to rethink its fundamentals, and start producing and innovating instead of just feeding talent to foreign shores.

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Let's Not Rush Into More Bank Mergers

The Union Cabinet's nod to the State Bank of India's (SBI) merger with its own five associate banks is welcome. It will place the country's largest lender among the top 50 global lenders, bring efficiency in its treasury operations and lower operating costs. Bigger size would allow SBI to finance large infrastructure projects and takeover deals with greater ease. Already, the SBI carries the tag, along with ICICI, of a domestic systemically

important bank and, therefore, needs to set aside more capital than its peers to cover risks. The combined entity should be well capitalised. However, the merger cannot fix the problem of bad loans. They must be resolved so that capital infusion does not end up as provisioning against bad loans. Post 2009-10, SBI had gained market share in deposits after the merger of State Bank of Indore with itself. So, consolidation will be beneficial for deposit growth. However, employee integration could be tricky, apart from other reported challenges such as provisions for pension liability due to differing employment benefit structures and synchronising accounting policies for recognition of bad loans.

According to analysis by Kotak Institutional Equities, SBI has 18% share in branches and 22% share in deposits and loans. It would be in the interest of the industry and the economy to not add to systemic risk. To keep banking competitive and to prevent the creation of banks that are too big to fail and of bankers who are too big to go to jail, the government should resist the temptation to rush into more bank mergers. India needs more payment banks and small banks to achieve financial inclusion, not gigantism. Let there be a couple of big banks, yet more new banks of different sizes and intense competition amongst them.

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Bravo, ISRO! Now for the heavylifting



Launching 104 satellites into space in one rocket called PSLV-C37 is, no doubt, a triumph of India's space research. It is an achievement on a global scale as well, sort of. While the number of satellites launched is more than three times the previous record for simultaneous launches, set by Russia in 2014, the combined weight of the satellites was a mere 1.3 tonnes, of which a cartography satellite weighed more than 700 kg. The rest were nano-satellites, each weighing a few kilograms.

The Indian National Committee for Space Research, founded in 1962 at the initiative of Jawaharlal Nehru and Vikram Sarabhai, metamorphosed into Isro in 1969, barely a month after humankind's first walk on the Moon. Conquest of the final frontier has been a work in progress, for all nations. Two commercial entities, Jeff Bezos' Blue Origin and Elon Musk's SpaceX, are serious contenders in the satellite launch business. India's space programme has been spectacularly low-cost. However, its ability to launch heavy payloads remains limited — anything above four tonnes stumps it. Isro's GSLV series of launch vehicles have an indigenous cryogenic engine, after a long delay. But their boosting power remains small. While Isro must continue indigenous work on rockets, materials, guidance systems, etc, it must proactively source available technology from around the world. One consequence of India's nuclear deal with the US has been its membership of the Missile Technology Control Regime (MTCR), secured last year, and liberation from assorted technology-denial sanctions that had been imposed after India's nuclear tests. As an MTCR member, India's access to rocket and related technology is much broader than it was, prior to that membership. India must use the new access it has to identify and procure the technologies it needs, to enhance its satellite-launch capability. India can and must stop reliance on foreign launchers for its communication satellites. Further, it must become a significant player in the market for heavier satellites as well.

बिज़नेस स्टैंडर्ड

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सार्वजनिक चर्चा के लिए प्रस्तुत करें विशेषज्ञ समितियों की रिपोर्ट

सरकार अक्सर प्रमुख नीतिगत मुद्दों की व्याख्या के लिए विशेषज्ञ समिति का गठन करती है। ये समितियां अपनी अनुशंसाएं संबंधित मंत्रालयों को भेजती हैं। इस मामले में मोदी सरकार भी अलग नहीं है। गत 32 महीनों में इसने इतनी ही समितियां गठित की हैं और इनमें से कई ने अपनी रिपोर्ट भी पेश की है। लेकिन एक अंतर है। सरकार इन समितियों के निष्कर्षों को जिस तरह बरत रही है वह पारदर्शी नहीं है। हालांकि इन रिपोर्ट के मामले में सरकार का विशेषाधिकार है लेकिन उसकी प्रतिक्रिया की अस्पष्टता उसके प्रशासन की शैली की कमजोरी ही दिखाता है। उदाहरण के लिए पूर्व कैबिनेट सचिव टीएसआर सुब्रमण्यन की अध्यक्षता वाली शिक्षा समिति के निष्कर्ष को ही लें। मानव संसाधन विकास मंत्रालय ने इसका गठन देश की शिक्षा व्यवस्था की खामियां चिह्नित करने के लिए किया था।

लेकिन गत मई में रिपोर्ट जमा होते ही विवाद उत्पन्न हो गया। पहले तो सरकार इसके निष्कर्ष जारी करने की इच्छुक ही नहीं नजर आ रही थी। बाद में यह भी सुनने में आया कि सुब्रमण्यन ने खुद ही रिपोर्ट जारी करने की तैयारी कर ली है। आखिरकार शर्मिंदगी से बचने के लिए मंत्रालय ने प्रमुख निष्कर्ष घोषित किए। सुब्रमण्यन ने कहा कि केवल चुनिंदा अनुशंसाएं सार्वजनिक की गई हैं।

मोदी सरकार को सुब्रमण्यन समिति की पूरी रिपोर्ट जारी नहीं करने से आखिर क्या फायदा हुआ? रिपोर्ट के कई हिस्से अब उपलब्ध हैं और उसमें की गई अनुशंसाओं पर मीडिया में व्यापक चर्चा भी हो रही है। यह अलग बात है कि सरकार अब एक नई समिति बनाना चाह रही है ताकि शिक्षा नीति में बदलाव पर अनुशंसाएं आमंत्रित की जा सकें। संभव है सरकार को सुब्रमण्यन समिति के विश्लेषण नई शिक्षा नीति में शामिल करने लायक न लगे हों और उसे दोबारा राय आमंत्रित करनी पड़ी हो। आखिरकार निर्वाचित सरकार के पास अलग-अलग विचारों को खंगालने का अधिकार तो है ही। ताकि वह समझबूझ कर अंतिम निर्णय ले सके। लेकिन किसी समिति की चुनिंदा अनुशंसाओं को सामने लाने के पीछे की दलील को समझ पाना या सराह पाना मुश्किल है। कोई भी सरकार अगर किसी विशेषज्ञ समिति की अनुशंसाओं की प्रतिपुष्टि और उन पर टिप्पणी के लिए तैयार रहती है तो इससे उसकी वैधता या संप्रभुता को कोई खतरा नहीं पैदा होता। इसके विपरीत किसी रिपोर्ट को पूरी तरह सार्वजनिक न करने का निर्णय जरूर सरकार को विशेषज्ञों की राय और उस पर व्यापक अंशधारकों की टिप्पणियों से वंचित कर देता है। बड़ी चिंता का विषय यह है कि विशेषज्ञ समितियों अथवा उनकी अनुशंसाओं से पारदर्शी तरीके से नहीं निपटने का असर वित्त मंत्रालय पर भी पड़ता है जो अन्यथा नीतिगत मसलों पर खुली बहस की व्यवस्था रखता है। उदाहरण के लिए जरा इस बात पर विचार कीजिए कि कैसे वित्त मंत्रालय ने बजट के ऐन पहले तमाम आर्थिक नीति संबंधी विकल्पों की चर्चा सालाना दस्तावेज यानी आर्थिक समीक्षा के जरिये होने दी।

वित्त मंत्रालय को भले ही बीते कुछ वर्षों की आर्थिक समीक्षा पर चर्चा से निकले नीतिगत विकल्पों के मामले में सफलता नहीं मिली हो लेकिन इसकी निर्णय क्षमता को अवश्य लाभ हुआ है क्योंकि आर्थिक समीक्षा में उठाए गए मुद्दों पर सरकार के भीतरी और बाहरी विशेषज्ञ बाकायदा चर्चा करते हैं। इसलिए यह बात थोड़ी समझ से परे है कि आखिर वित्त मंत्रालय कुछ अन्य विशेषज्ञ समिति रिपोर्ट से निपटते समय वही दिमागी खुलापन क्यों नहीं दिखा पाता?

उदाहरण के लिए मोदी सरकार के पहले बजट में सरकारी व्यय में सुधार की प्रतिबद्धता जताई गई थी। घोषणा की गई थी कि इसके लिए व्यय प्रबंधन आयोग का गठन किया जाएगा। विचार यह था कि आयोग की अनुशंसाओं की मदद से कई बेकार होने वाले सरकारी व्यय कम किए जाएंगे। यह उद्देश्य सराहनीय था और वित्त मंत्रालय ने आरबीआई के पूर्व गवर्नर बिमल जालान के नेतृत्व में समिति गठित भी कर दी। आयोग

ने वित्त मंत्रालय को दो रिपोर्ट सौंपकर अपना काम पूरा कर लिया। लेकिन मंत्रालय ने उनमें से किसी भी रिपोर्ट या उसके निष्कर्ष को सार्वजनिक नहीं किया है।

वित्त मंत्रालय कह सकता है कि सरकार ने रिपोर्ट पर विचार किया और उनकी कुछ अनुशंसाओं को लागू भी किया। लेकिन रिपोर्ट को चर्चा के लिए जारी क्यों नहीं किया गया? लोगों को सरकारी व्यय की कमी के मसले पर आयोग का विचार जानने का अवसर क्यों नहीं दिया गया? अगर रिपोर्ट सार्वजनिक की जाती तो लोगों को यह आकलन करने का मौका मिलता कि सरकार अपने व्यय में कटौती को लेकर कितनी समझदारी दिखा रही है। आर्थिक समीक्षा में विचारों के प्रसार ने वित्त मंत्रालय को एक मुक्त समझ वाले संस्थान की छवि प्रदान की। ऐसे में व्यय प्रबंधन आयोग की रिपोर्ट जारी करने से भी कोई समस्या नहीं आनी चाहिए थी।

यह प्रश्न दो अन्य विशेषज्ञ समिति रिपोर्टों के प्रकाश में अहम हो उठता है। ये रिपोर्ट पिछले कुछ माह में सम्मिलित की गईं और वित्त मंत्रालय का इनको सार्वजनिक करने का कोई इरादा नहीं दिखता। पूर्व मुख्य आर्थिक सलाहकार शंकर आचार्य की अध्यक्षता वाली समिति ने इस बात पर रिपोर्ट पेश की कि क्या सरकार को वित्त वर्ष बदलने की आवश्यकता है? पूर्व राजस्व सचिव एन के सिंह की अध्यक्षता वाली एक अन्य समिति ने सरकार के राजकोषीय सुदृढीकरण संबंधी मार्ग पर अपनी रिपोर्ट पेश की। इस दलील में कोई दम नहीं है कि इन रिपोर्ट को सार्वजनिक करने से सरकारी जानकारियों को गलत समझा जा सकता है और सरकार को इसके लिए जवाबदेह ठहराया जा सकता है। वित्त मंत्रालय अगर उनको शीघ्र सार्वजनिक करके उन पर एक स्वस्थ सार्वजनिक बहस आमंत्रित करे तो बेहतर होगा। बड़ा सवाल यह है कि इन रिपोर्ट को रोक कौन रहा है- वित्त मंत्रालय या फिर प्रधानमंत्री कार्यालय के आदेश पर ऐसा किया जा रहा है?



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संस्कृति की सरहद

दुनिया में कहीं भी सांस्कृतिक गतिविधियों को सरहदों के जरिए रोकने की कोशिश कामयाब नहीं हो सकी। मगर कई बार दो देशों के बीच राजनीतिक उथल-पुथल या तनाव के हालात का सीधा असर वैसे फैसलों पर पड़ता है, जिनमें एक-दूसरे के संगीत, सिनेमा, नाटक या खेल वगैरह को सीमित या प्रतिबंधित करने की कोशिश की जाती है। पिछले कुछ समय से भारत और पाकिस्तान सीमा पर फौज के बीच जिस तरह के तनाव देखने में आए, उसका असर सांस्कृतिक क्षेत्र पर भी पड़ा। मसलन, पीईएमआरए यानी पाकिस्तान इलेक्ट्रॉनिक मीडिया रेगुलेटरी अथॉरिटी ने बीते साल अक्तूबर में टीवी और रेडियो पर प्रसारित होने वाले भारतीय कार्यक्रमों पर पाबंदी लगा दी थी। निश्चित रूप से यह भारत और पाकिस्तान के बीच तनातनी का नतीजा था, लेकिन इसका बड़ा आर्थिक नुकसान न केवल वहां के फिल्म उद्योग को हुआ, बल्कि वे तमाम टीवी दर्शक भारतीय फिल्मों और धारावाहिकों को देखने से वंचित हो गए, जो कई वजहों से भारतीय परिवेश से अपना सांस्कृतिक जुड़ाव महसूस करते हैं। अब पीईएमआरए की एक रिपोर्ट अदालत में पेश किए जाने के बाद सोमवार को लाहौर के हाईकोर्ट ने निजी टीवी चैनलों को भारतीय फिल्में दिखाने की इजाजत दे दी है। हालांकि पीईएमआरए के साथ निजी चैनलों के समझौते की शर्तों में यह शामिल है कि उन्हें भारतीय फिल्में दिखाने की अनुमति है। लेकिन सीमा पर उपजे तनाव के राजनीतिक शकल अख्तियार कर लेने के बाद वहां भारतीय कार्यक्रम प्रसारित करने से रोक दिया गया था। इस मसले पर दायर याचिका में कहा गया था कि भारतीय कार्यक्रम पाकिस्तान के चैनल पर बहुत लोकप्रिय है। जाहिर है, लोकप्रियता का यह सिरा व्यापक जनता से लेकर अर्थव्यवस्था में इसकी भूमिका तक से जुड़ा है। हैरानी की बात यह है कि एक ओर भारतीय फिल्मों को पाकिस्तान में सिनेमा घरों में दिखाए जाने पर रोक नहीं थी, लेकिन टीवी चैनलों पर इनके प्रसारण को

बाधित किया जा रहा था। हालांकि ऐसा नहीं है कि पाबंदी लगाने जैसी प्रतिक्रिया केवल पाकिस्तान में दिखाई देती है। उरी में हुए आतंकवादी हमले में भारतीय सैनिकों की शहादत के बाद इंडियन मोशन पिक्चर्स प्रोजेक्ट्स एसोसिएशन ने पाकिस्तानी कलाकारों को प्रतिबंधित कर दिया था। यही नहीं, उन भारतीय फिल्मों के प्रदर्शन को रोकने की धमकी दी गई थी, जिनमें पाकिस्तानी कलाकारों ने काम किया। भारत में कुछ संगठनों की ओर से भी ऐसा ही अभियान चलाया गया। इसलिए पाकिस्तान में टीवी चैनलों पर बॉलीवुड की फिल्में नहीं दिखाना दरअसल ऐसी ही प्रतिक्रिया की एक कड़ी थी। विडंबना यह है कि दो देशों के बीच खेल, संगीत, सिनेमा, नाटक और दूसरी सांस्कृतिक गतिविधियों के आदान-प्रदान के जरिए तनाव की बर्फ पिघलाने में मदद मिल सकती है, लेकिन राजनीतिक तनाव की आग की चपेट में वे भी आ जाते हैं। खासकर भारत और पाकिस्तान की सामान्य जनता के बीच जिस तरह सांस्कृतिक अभिरुचियां रही हैं, उसमें दोनों ही खुद को एक-दूसरे के करीब और अपना-सा पाते हैं। जिस तरह भारतीय फिल्में पाकिस्तानी लोग पूरे उत्साह से देखते हैं, उसी तरह पाकिस्तान में बनी कई फिल्में और टीवी धारावाहिक भी भारत में काफी लोकप्रिय हुए। आतंकवाद से इतर भारत और पाकिस्तान के साधारण लोग एक-दूसरे से सांस्कृतिक रूप से करीब से जुड़े हुए हैं। इसलिए अच्छा यह हो कि आतंकवाद या राजनीतिक आग्रहों से इसी मोर्चे पर निपटा जाए, न कि दोनों तरफ की आम जनता को इसमें शामिल किया जाए।



Date: 16-02-17

Happiness, beyond measure

People are jumping on to the Gross National Happiness bandwagon, in an attempt to capture something that remains elusive



What is common to Bhutan, Venezuela, the United Arab Emirates (UAE) and Madhya Pradesh? All of them have a ministry/department for happiness. Bhutan is talked about the most, with the idea of GNH (Gross National Happiness) presented as some kind of alternative to GDP (gross domestic product). GNH is built into Bhutan's constitution, in Article 9, on Principles of State Policy. What is invariably quoted is Article 9.2: "The State shall strive to promote those conditions that will enable the pursuit of Gross National Happiness." However, this follows Article 9.1: "The State shall endeavour to apply the Principles of State Policy set out in this Article to ensure a good quality of life for the people of Bhutan in a progressive and prosperous country that is committed to peace and amity in the world."

Operationally, what does this mean? Those who mention Bhutan talk about GNHI (Gross National Happiness Index), administered by the Centre for Bhutan Studies and GNH Research. GNHI is based on four pillars (political, economic, cultural and environmental) and nine domains (which can be skipped for present purposes). There were surveys in 2010 and 2015 to determine how Bhutan performed on GNHI. Hence, along a happiness/unhappiness continuum, progress could be measured and one had an aggregate measure that was an alternative or supplement to GDP, based on subjective responses to questionnaires that were then aggregated. To state the obvious, Bhutan has a population of around 7,50,000. But I don't think the alternative or supplementary summary measure is the point. The point is the Planning Commission and Committee of

Secretaries being subsumed in the Gross National Happiness Commission (GNHC). In other words, feedback received from GNHI surveys is factored into government policies and public expenditure priorities, reflected in central and local body plans. More than the aggregate measure, if I have understood the idea right, this suggests decentralised planning to me. Ascertain the needs of gram panchayats/urban local bodies. Use those local plans to aggregate and move up to a block level, district level and national plan. If we get too fixated on the alternative to the GDP idea, we lost sight of this process, the operational and much more important part.

After a lot of sarcastic comments and dark humour in 2013, I haven't heard much about Venezuela's vice ministry of supreme social happiness. Perhaps it just vanished, because of chaos and general uncertainty. The initial idea seems to have been to converge anti-poverty programmes directed at disabled, homeless, poor and old-age pensioners. Unlike Bhutan, you don't ask people what their priorities are. Given the ideology of the government, you know what people want, or should want. At best, you synergise across schemes. This also illustrates why discussions on happiness that mention both Bhutan and Venezuela in the same breath are misleading.

I don't think it is fair to place UAE in the same bracket either. In 2016, UAE announced a new ministry (and minister of state) for happiness. It may be early days, but so far, all this ministry seems to have done is to train officers from federal and local government to become "chief happiness and positivity officers". I am not sure the UN General Assembly Resolution of July 19, 2011 was a very good idea: "(1) Invites Member States to pursue the elaboration of additional measures that better capture the importance of the pursuit of happiness and well-being in development with a view to guiding their public policies; (2) Invites those Member States that have taken initiatives to develop new indicators, and other initiatives, to share information thereon with the Secretary-General as a contribution to the United Nations development agenda, including the Millennium Development Goals". Irrespective of what is done to public policy formulation, people are jumping on to the bandwagon of measuring and pushing something that is, at best, elusive. The UN's World Happiness Report, an annual feature since 2012, is based on diverse indicators across GDP per capita, social support, healthy life expectancy, freedom to make choices, generosity and perceptions of corruption (trust). Measure a country's distance from the perfect dystopia and you have a rank and a score. In 2016, India had a rank of 118 out of 150 countries.

If citizens are happier in a certain country, presumably people would want to migrate there, given a choice. In 2016, the top three countries were Denmark, Switzerland and Iceland and both Nepal and Bangladesh have higher ranks than India. It is worth checking out the number of Indian immigrants to these five countries. Among India's states, Madhya Pradesh was the first one to start a happiness department in 2016. It is early days there too. At the moment, the focus is on volunteers training people to positively impact the lives of others. This is thus an attempt to bring about behavioural changes in people, not behavioural changes within government. Such disparity across three countries and a state should remind you of the clichéd blind men and the elephant and perhaps of John Godfrey Saxe's poem too. Most people will remember how the poem starts. "It was six men of Indostan.." And this is how it ends: "So, oft in theologic wars/ The disputants, I ween/ Rail on in utter ignorance/ Of what each other mean/ And prate about an Elephant/ Not one of them has seen!" For happiness too, theology is a good expression, because that's what the fetish about measurement has reduced it to. The means of measurement have become more important than the end.

The writer is a member of Niti Aayog. Views are personal



THE HINDU

Date: 16-02-17

The devil is in the fine print

Electoral reforms announced in the Budget are not what they are claimed to be – they will neither cleanse our politics nor bring transparency

Given his interest in cricket, this must be called Finance Minister Arun Jaitley's 'doosra'. His announcement on electoral reforms in his Budget speech combined an element of surprise, some degree of deception and a sleight of hand – all that go into a doosra in cricket. It is a mark of his deftness that his delivery foxed many a seasoned player. Initial reactions to Mr. Jaitley's announcement ranged from gushing to lukewarm approval. Breathless TV anchors announced it as a historic act of cleansing our polity, just as Mr. Jaitley would have us believe. More sober commentators saw it as a significant though inadequate step forward in the right direction. Even the sceptics felt that the Finance Minister had at least put the issue of political funding on the table. Everyone thought the ball was headed in the right direction. It took a while for democratic reform and right to information activists to find out that this was the wrong one. The fine print of the Finance Bill showed that Mr. Jaitley's proposals for bringing 'transparency and accountability' would achieve exactly the opposite. Ranging from redundant to sinister, these proposals would rob the system of whatever little transparency and accountability that it has today. Worse, they draw national attention away from a series of electoral funding reforms that the Election Commission and democratic reform activists have been asking for a long time.

All the four elements

This might sound like the usual oppositional and alarmist reaction. So, let us carefully unpack each of the four elements of the scheme announced by the Finance Minister to "cleanse the system of funding of political parties". First, he claimed to follow the Election Commission in proposing a ceiling of Rs.2,000 on the amount of cash donation that a political party can receive from one person in a year. Second, he announced that political parties would be "entitled to receive" donations by cheque or digital mode from their donors. Third, he proposed a new scheme of Electoral Bonds. Fourth, he said that every political party would have to file its Income Tax return within the prescribed time limit in order to enjoy exemption from payment of income tax. He insisted that this scheme will bring about "greater transparency and accountability in political funding, while preventing future generation of black money". Now, the second and the fourth components of this scheme are redundant, as these are no different from what the existing law provides for. It does not require a new law to say that political parties are "entitled" to receive donations by cheque or digitally. They were always entitled to this and were already doing so. We needed a new law to mandate that the parties would be "required" to receive donations by cheque or digitally. The Finance Minister did not propose any such thing. Similarly, the existing law requires political parties to file their income tax returns to enjoy tax exemption. The Finance Bill now proposes a new proviso in Section 13A clause (d) of the Income Tax Act 1961 that explicitly says that the return should be filed within the stipulated time limit. So far, all major parties have routinely flouted this requirement. Big national parties file their return months after the due date and many parties don't file the return at all. No one gets penalised for this non-compliance. The government really did not need this amendment if it had the will to enforce the existing law.

Limiting cash donations

The proposal about limiting cash donations to Rs.2,000 has been widely misunderstood and therefore welcomed as a first step in the right direction. Everyone was foxed into believing that the limit for anonymous donations, contributions that are exempt from reporting, has been reduced from the existing Rs.20,000 to Rs.2,000. That is what the Election Commission (EC) had asked for in its revised compendium of Proposed Electoral Reforms in December 2016. The Finance Minister's speech claimed to follow the EC's advice. The Finance Bill reveals something different. The existing limit of rs.20,000 on anonymous donation as per Section 23 of the Representation of the People Act (RPA) has been left untouched. The Minister has merely proposed a new, additional, clause that limits cash donation from one source to Rs.2,000 in one year. Notice that there was and is no requirement to disclose a contribution by cheque or digital transfer up to Rs.20,000. There was and is no limit to how much a party can receive from anonymous donations. More importantly, there was and is no limit to how much overall a party can receive in cash from all sources put together. Following the Law Commission's recommendations, the EC had proposed that no party should be allowed to receive more than Rs.20 crore or 20% of its overall donations from anonymous sources. The Minister did not pay heed to this.

This proposal is unlikely to make any difference to the business as usual for political parties. The fact is that most political funds remain in the pockets of party leaders. A small amount enters the coffers of the party and becomes party funds. A tiny fraction of party funds is placed in the bank accounts of the party to meet some expenses that cannot remain invisible. The figures widely discussed in the media relate to that tiny fraction of party funds, which is a small proportion of political funds. Most of this is not voluntary contribution or donation. Much of what political parties show as donations is black money generated by party leaders which is turned into white money by way of book entries as donations to the party. So far, the accountant who had to covert, say, Rs.100 crore had to make sure that the entire amount was broken down into entries of Rs.20,000 or below. Now they will absorb the same amount by breaking it down into entries of Rs.2,000 or below. All that the proposed law would ensure is more book entries and perhaps a higher fee for the accountant. Otherwise, it would be business as usual.

Trouble with electoral bonds

Still, one can say that this change would do no harm. But that is not the case with the new proposal of Electoral Bonds. Although the detailed rules are yet to be framed, the basic outline of the scheme is clear. Anyone who wants to donate to a political party would be able to purchase bonds from authorised banks. This purchase will have to be in 'white money' against cheque and digital payments only. Once purchased, these bonds will be like bearer bonds and will not contain the name of the eventual beneficiary. These bonds shall be redeemable only in the designated account of a registered political party within a prescribed period. So, the donor's bank would know about who bought how much of Electoral Bonds, but not the name of the party which received it. The party's bank would know the amount deposited through Bonds, but not the identity of the donor. The Income Tax authorities and the EC would not know anything: reporting of donor, beneficiary, or even the amount of contribution has been exempted by amending the Income Tax Act Section 13A (b) and the RPA, Section 29C. The net effect, and indeed the purpose, of the Bonds will be that no one except the fund giver and the fund receiver would know about this exchange done in white money with full tax exemption.

Let us think of a classic quid pro quo. A government favours a business house in a mining or spectrum or oil deal to the tune of Rs.5,000 crore. Both of them have a fifty-fifty deal. Under the existing arrangement, the business house would have to either declare in its balance sheet a 'donation' of Rs.2,500 crore to the ruling party, or find that much cash to secretly hand over to the party bosses. If the payment is in white, the party will have to declare the amount and the name of the company to the Income Tax authorities and to the EC. Now, the company could simply purchase Election Bonds worth Rs.2,500 crore and hand it over to the party. The company's balance sheet will show "purchase of Election Bonds" with no name of the beneficiary, while it

enjoys 100% tax deduction on that amount. The party will simply deposit the money in its account, with no obligation to report anything to the IT authorities or to the EC. It may well report an innocuous amount of, say, Rs.3.8 crore as its annual reportable income! So much for transparency! Once introduced, these bonds will mask whatever little transparency exists in the current system. Instead of the usual practice of converting black money into white, these bonds will push white money into a grey, if not black, trail. Indeed, the black money in politics might go down, as the white money has been provided a perfect cover of secrecy. Why would anyone give any money to a political party through cheque or digital payment and face all the hassle of disclosure?

Arun Jaitley's doosra is a great leap backwards in the history of election funding reforms.

Yogendra Yadav is President of the newly formed party, Swaraj India.

Date: 16-02-17

Time to Break in India

There is no point in hitching our bandwagon to what will soon be an obsolete patent game. We must think through alternative innovation incentives such as prizes and open source formats

The U.S. Chamber of Commerce is at it again, admonishing us for lagging behind on the IP infobahn by refusing to bolster up our patent numbers, and ranking us close to the bottom on their insidious IP index, 43rd out of a total of 45 countries. India is even below Brunei, a nation known more for its rich royalty (not of the IP kind) than innovation/ technology, only because it signed up to the Trans-Pacific Partnership. And therein lies the biggest problem with the index: it is rife with methodological flaws. It is a fraudulently formalistic method of shaming countries into thinking that they are children of a less creative god, a point made by some of us in previous years where they ranked Togo too above India. And yet the U.S. Chamber of Commerce and its IP wing, the 'Global Intellectual Property Center', continue to dole out such rankings with gay abandon.

A seductive logic

What is most striking is that our indigenous innovation gurus have been quick to lap up the seductive logic of these rankings and warn us in dire tones that we need to catch up, or else be left behind. And that if we have to truly 'Make in India', we must ramp up our patent numbers. But should we be 'making' IP in India? Or 'breaking' it? Our technological proficiency in pharmaceuticals came through the active breaking of multinational IP, yielding a world-class generic industry and affordable medications for our public. But that is an old script, and we need to move on. The time is ripe for another kind of breaking. For the standard IP script has done its time, one that harks back to a 15th century Venetian model. Barring some tweaks here and there, we're stuck with largely the same frame. It is a tad bit paradoxical that when IP rights are meant to further innovation, the legal regimes themselves have been shielded from innovative experimentation. It is time therefore for India to break this ancient IP paradigm, for it rests on the assumption that IP and the technological information that it protects can be treated as real property. Centuries ago, a clever jurist by the name of Hugo Grotius theorised that water could never be appropriated in the same way as land, since it "flowed". From there we got the notion of the high seas, exclusively appropriable by no single nation but available to all. With information, the flow properties are even greater. And yet our IP regime continues to equate it to land and real property. Read a patent document cover to cover, and you'll understand why it's impossible to know even where the "fence" that delimits this alleged property lies.

Quite apart from the fact that the patent grant itself is at best a lottery: a probabilistic right as some U.S. scholars are wont to label it. Here today, gone tomorrow! Some may say this is peculiar to India, which invalidates patents by the dozen. But if data are anything to go by, we're not that different from our allegedly more advanced patent comrades, the U.S. and Germany, where the invalidity rate is as high as 50%. There is a reason for this. Patent offices often get it wrong, being resource starved and all that. But more importantly, the fine art of adjudicating the merits of a patent rests on the highly subjective test of whether or not an alleged invention is cognitively superior to what existed before ("prior art"), leading to highly differential results across the world on the very same patent application — as Pfizer found to its dismay in the famed Viagra case, where the Japanese and the Americans held the patent to be valid, but the British invalidated it on the ground that there was a thinly veiled reference to the allegedly inventive path in a science publication authored by a Nobel Prize winner.

The AI challenge

This uncertainty is bound to increase as patent offices get more circumspect about the grant of patents, and like India begin asserting their right to insist on stricter patent standards. But more problematically, the test of cognitive advancement that is central to patent law rests on the notion of the person skilled in that particular art/technology. Would it be obvious to him/her? Now that we're in the age of artificial intelligence where machines can think as well as humans (well almost), and are inventing by the dozen (since its now possible to code them with creativity, at least of the combinational kind), the skilled person could soon be this artificially intelligent machine. Under its infinitely vast repertoire, almost nothing would count as inventive or non-obvious, given that every potential combination of prior art (which is what most patents are about) is known or at least knowable to these non-sentient sapiens. In short, patents breed uncertainty of an order that is far more significant than most other legal instruments, and are terribly inefficient even on their own internal economic logic. Little wonder that that some of the finest minds in the technology space such as Elon Musk are now giving up on patents. Given this scenario, there is no point hitching our bandwagon to what will soon be an obsolete patent game. We must therefore leapfrog and think through alternative innovation incentives such as prizes and open source formats. Much the same way that we did with smartphones, where we avoided the huge costs that might have come with investing significantly in landlines, laptops and the like.

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ISRO sets the bar high

The Indian Space Research Organisation boosted its reputation further when it successfully launched a record 104 satellites in one mission from Sriharikota on Wednesday by relying on its workhorse Polar Satellite Launch Vehicle rocket. An earth observation Cartosat-2 series satellite and two other nano satellites were the only Indian satellites launched: the remaining were from the United States, Israel, the UAE, the Netherlands, Kazakhstan and Switzerland. Of the 101 foreign satellites launched, 96 were from the U.S. and one each from the other five countries. Till now Russia held the record of launching 37 satellites in a single mission, in 2014, while the National Aeronautics and Space Administration of the U.S. launched 29 satellites in one go in 2013. Last June, ISRO had come close to NASA's record by launching 20 satellites in one mission. But ISRO views the launch not as a mission to set a world record but as an opportunity to make full use of the capacity of the launch vehicle. The launch is particularly significant as ISRO now cements its position as a key player in the lucrative commercial space launch market by providing a cheaper yet highly reliable alternative. At an orbital altitude of around 500 km, the vehicle takes about 90 minutes to complete one orbit. Though ISRO had sufficient time to put the satellites into orbit, it accomplished the task in about 12 minutes. With the focus on ensuring that no two satellites collided with each other, the satellites were injected in pairs in opposite

directions. Successive pairs of satellites were launched once the vehicle rotated by a few degrees, thereby changing the separation angle and time of separation to prevent any collision. ISRO plans to launch more Cartosat-2 series satellites and even an improved version. Besides setting the record for the most number of satellites launched in a single mission, the Indian space agency has launched two nano satellites weighing less than 10 kg. It is a technology demonstrator for a new class of satellites called ISRO nano satellites (INS). The main objective of the INS, which will be launched together with bigger satellites, is to provide a platform on which payloads up to 5 kg from universities and R&D laboratories, and ISRO itself can be easily integrated for carrying out scientific research activities. With many Indian universities already building and launching nano satellites, the availability of a dedicated nano satellites platform is sure to boost space research in India.

Date: 16-02-17

Planning for the people

It has now become a truism that Indian cities are poorly planned and governed. Plans do not have complete sway over our cities since they are constantly violated and a significant section of the urban population lives outside “planned” neighbourhoods. Nevertheless, the state religiously performs the ritual of master planning every 10 or 20 years. Bengaluru is now in the midst of drawing up its master plan that will guide the city’s development till 2031. The planning process initiated by the Bangalore Development Authority (BDA) has come under severe criticism from civil society groups. In public consultations held by the BDA last month, citizens were critical of the planning process and even questioned the legitimacy of the BDA to plan for the city. The dissensions brewing in Bengaluru are symptomatic of the larger crises in the institutional framework for urban planning and governance in India. India’s urban planning system is seen as an undemocratic, non-participative and top-down exercise in which bureaucrats, aided by foreign consultants, draw up static master plans that will actually have limited influence in regulating urban development. Hence, it is worthwhile to examine the institutional infirmities that plague India’s current planning system and explore whether there are any alternatives.

Urban planning and local democracy

One of the fundamental issues with our planning process is the incongruence between urban planning and local democracy. Even though the 74th Constitutional Amendment sought to empower urban local governments to enable them to function as “institutions of self-government”, they still have limited influence over how the city is planned. Urban planning, regulation of land use, and planning for economic and social development are functions listed under the 12th Schedule of the Constitution and hence States are expected to devolve these tasks to the Municipal Corporation. For metropolitan cities with a population of over 10 lakh, the 74th Amendment mandates the creation of Metropolitan Planning Committees (MPCs) which will integrate the plans prepared by local bodies within the metropolitan area. For every city with a population of over three lakh, the Constitution also mandates the setting up of Ward Committees to carry out municipal functions within the ward. However, more than two decades after the passing of the 74th Amendment, we find that these institutional frameworks for decentralised governance are yet to take full shape in most cities. The legislations governing urban planning have not been significantly altered to ensure that these institutions are made an integral part of the planning process. Though the Union government in 1996 issued a Model Regional and Town Planning and Development Law, which requires Municipal Corporations to prepare local plans and the MPC the regional plans, most States have failed to incorporate these provisions in their planning legislations. So, under the Karnataka Town and Country Planning Act, the Local Planning Authority responsible for preparing the master plan of Bengaluru continues to be the BDA and not the Municipal Corporation or the MPC. Also, the legislation does not mandate that plans be prepared on the basis of public participation and merely asks for public comments on the plan after it is already prepared. Similar provisions govern other cities in India. Hence, planning continues to be a top-down bureaucratic exercise, disconnected from the institutions of local democracy provided under the Constitution. An urban planning system, which is in line with the spirit

of the 74th Amendment, would require that instead of development authorities — agencies only answerable to the State government — planning processes should be exercised at the legitimate units of urban local governance—Ward Committees, Municipal Corporations and MPCs. Such a multi-scale planning framework can help planning become an iterative process through which the needs and aspirations of various localities are incorporated into the plan for the metropolitan region.

Beyond static master plans

The other key concern with India's current urban planning regime is that it is still based on the outmoded practice of static, land use-based master plans. The Town and Country Planning Acts of various States are principally based on a 1947 British legislation which has actually been significantly modified in the U.K. Under this planning regime, master plans are principally restricted to zoning which segregates areas into various categories: residential, commercial, industrial, agricultural, etc. Our planning legislations do not require the master plan to design the transport, water and energy networks of the city. Even when master plans are comprehensive and integrate various sectors into the plan, these elements of the plan are not statutorily binding. What makes these sectoral plans even more difficult to implement is the fact that these functions are typically under the jurisdiction of multiple parastatal agencies.

Considering the institutional infirmities of the current planning regime, it is important to explore alternative approaches to urban planning. In an environment where municipal functions are carried out by multiple agencies, it is important to develop new institutional mechanisms for the inter-sectoral coordination and implementation of plans. We should also consider moving beyond static land use-based master plans and adopt a planning process which is more dynamic and responsive to the needs of the people. Instead of freezing plans for 10 or 20 years, there should be mechanisms providing for the periodic review of plans. An inflexible urban planning system which is ostensibly based on rationalistic and scientific criteria, and therefore “apolitical”, is prone to be more exclusionary. Hence, we should explore new frameworks for urban planning that respect the spirit of local democracy envisaged under the 74th Amendment, integrate multiple sectors within the plan, provide for multi-scale planning processes, and view the plan as a dynamic, living document.

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एक रोल मॉडल

कहते हैं, अच्छा विज्ञान अच्छे कारोबार का आधार बनता है। भारत की निजी कंपनियों को अगर इसे सीखना हो, तो उन्हें भारतीय अंतरिक्ष अनुसंधान संगठन यानी इसरो के पास जाना होगा। बुधवार को इसरो ने एक रॉकेट से एक साथ 104 उपग्रह अंतरिक्ष में स्थापित करके विश्व रिकॉर्ड तो बनाया ही, पर इसके साथ ही कारोबार की दुनिया में जो छलांग लगाई, वह इससे कहीं ज्यादा महत्वपूर्ण है। अनुमान है कि अंतरिक्ष में उपग्रह स्थापित करने का विश्व बाजार इस समय 500 अरब डॉलर सालाना से ज्यादा का हो चुका है। यह बाजार तेजी से आगे बढ़ रहा है, क्योंकि दुनिया का बहुत सारा कार व्यापार उपग्रहों पर आश्रित हो चुका है, और दुनिया का छोटे से छोटा देश भी यह चाहता है कि उसकी जरूरतें पूरी करने के लिए आसमान में उसका अपना उपग्रह हो। उपग्रह स्थापित करने के बाजार में इसरो ने जो सफलता हासिल की है, वह उसे काफी ऊपर ले जा सकती है। इसरो की व्यापारिक इकाई अंतरिक्ष कॉरपोरेशन का विदेश व्यापार इस साल 204.9 फीसदी बढ़ा है। देश की

बहुत सी निजी कंपनियां इस तरक्की से ईफ़्या कर सकती हैं। बुधवार को लांच किए गए पीएसएलवी रॉकेट का ही उदारण लें। इसने जो 104 उपग्रह सफलता के साथ अंतरिक्ष की कक्षाओं में स्थापित किए हैं, उनमें से 101 विदेशी हैं। कई छोटे देशों के उपग्रहों के अलावा इनमें से 88 एक अमेरिकी कंपनी प्लेनेट लैब के नैनो सैटेलाइट हैं। यह कंपनी धरती की छवियां लेने और उन्हें वर्गीकृत करके बेचने का काम करती है। जाहिर है कि उसके पास अमेरिकी कंपनियों समेत कई विकल्प रहे होंगे, लेकिन मुनाफे के लिए व्यवसाय कर रही एक कंपनी ने इसरो पर भरोसा किया, यह तथ्य अपने आप में बहुत कुछ कहता है।

अंतरिक्ष के बाजार में इसरो एक बहुत बड़ा खिलाड़ी बनने जा रहा है, जिसे लगभग पूरी दुनिया काफी समय से मानती है। शुरू में भारत अपने उपग्रह अंतरिक्ष में स्थापित करने के लिए सोवियत रॉकेटों और निजी कंपनी आर्यनस्पेस पर पूरी तरह निर्भर था। आज हालत यह है कि आर्यनस्पेस इसरो की व्यापारिक सहयोगी है। आर्यनस्पेस के पास आए कई उपग्रह इसरो ने ही अंतरिक्ष में स्थापित किए हैं। इसरो की दो विशेषताएं उसे दुनिया में सबसे अलग और महत्वपूर्ण अंतरिक्ष एजेंसी बनाती हैं। एक तो उसने बहुत ही कम लागत में कोई भी अभियान पूरा करने में सफलता हासिल कर ली है। जिस मंगल अभियान को अमेरिकी अंतरिक्ष एजेंसी नासा ने 671 अरब डॉलर में पूरा किया, वैसे ही अभियान को इसरो ने महज 73 अरब डॉलर में पूरा कर लिया। दूसरी बात यह है कि इसरो की असफलता की दर दूसरी सभी अंतरिक्ष एजेंसियों से काफी कम है, यहां तक कि इस बाजार में भारत के सबसे बड़े प्रतिद्वंद्वी चीन की एजेंसी से भी काफी कम। असफलता की दर कम होना अंतरिक्ष बाजार में साख का सबसे बड़ा आधार होता है।

इसरो की यह सफलता बहुत कुछ कहती है, तो कई परेशान करने वाले सवाल भी पूछती है। हमारी सार्वजनिक क्षेत्र की दूसरी कंपनियां क्यों ऐसी ऊंचाइयों तक नहीं पहुंच पातीं? प्रतिरक्षा शोध और विकास संगठन यानी डीआरडीओ क्यों नहीं ऐसी तकनीक विकसित कर सका कि हम सुरक्षा उपकरणों के मामले में पूरी दुनिया को टक्कर दे सकें? इसरो की असफलता की जो दर है, वैसी असफलता की दर हमारे प्रशासन और हमारी सरकारों की क्यों नहीं हो सकती? जरूरी है कि इसरो को सिर्फ एक सफल अंतरिक्ष एजेंसी ही नहीं, उसे पूरे देश के लिए एक रोल मॉडल भी माना जाए। इसरो के कामकाज में हमें जो जज्बा दिखाई देता है, आगे बढ़ने के लिए पूरे देश को उसी जज्बे की जरूरत है।

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कामयाबी का सातवां आसमान

बुधवार को भारतीय अंतरिक्ष अनुसंधान संगठन (इसरो) ने जो उपलब्धि हासिल की, वह विलक्षण है। यह ठीक ऐसा है कि कोई एक ओवर में छह छक्के लगा दे। हमने एक साथ 104 उपग्रहों को अंतरिक्ष में भेजा, जिनमें कार्टोसेट के साथ-साथ नैनो उपग्रह भी थे। कार्टोसेट से फायदा यह मिलेगा कि अब हम भारत महाद्वीप का नक्शा कहीं बेहतर हाई रिजोल्यूशन में देख सकेंगे। इतना ही नहीं, आने वाले दिनों में हम अपना जीपीएस भी बना सकेंगे, जिससे दूसरे देशों पर हमारी निर्भरता खत्म हो जाएगी। इन उपग्रहों से जनसांख्यिकीय से जुड़े आंकड़ों को पाने में भी मदद मिलेगी। साथ ही, इससे हमारी पूर्व चेतावनी प्रणाली भी काफी बेहतर होगी, जिसका फायदा हमने अक्टूबर, 2014 में देखा, जब चक्रवाती तूफान से लाखों जिंदगियों को इसी प्रणाली के बूते बचाया गया था। अब से पहले अंतरिक्ष में एक साथ सबसे ज्यादा उपग्रह भेजने का रिकॉर्ड रूस के नाम था। उसने साल 2014 में 37 सैटेलाइट भेजे थे। बुधवार को हमने इसके तीन गुना ज्यादा सैटेलाइट भेजे हैं। इस उपलब्धि को पाना दूसरे देशों के लिए इसलिए मुश्किल नहीं है कि वे ऐसा नहीं कर सकते। वे भी कर सकते हैं, क्योंकि अगर हमें पे-लोड यानी यह पता हो कि कितना वजन अंतरिक्ष में भेजा जा सकता है, तो उसे छोटे-छोटे उपग्रहों में बांटकर कोई भी देश धरती की कक्षाओं में स्थापित कर सकता है। असल में, उनके सामने अड़चनें दो हैं। पहली, एक साथ इतनी बड़ी मात्रा में सैटेलाइट तैयार हो, ताकि उसे एक साथ भेजा जा सके। अंतरिक्ष

का बाजार काफी अनिश्चितता से भरा है, इसलिए ठोस रूप से कहना आसान नहीं माना जाता। इसी तरह, दूसरी अड़चन भरोसे की है। अंतरिक्ष एजेंसी पर यह विश्वास हो कि वह जिम्मेदारी के साथ उपग्रहों को उसकी कक्षा में स्थापित कर सकेगी। यह जिम्मेदारी इसलिए मायने रखती है, क्योंकि उपग्रह बनाना और उसे भेजना काफी खर्चीला होता है। इसरो के हक में अच्छी बात यह है कि उसने इन दोनों अड़चनों से सफलतापूर्वक पार पा लिया है। यह भारत के लिए गर्व की बात है। इसरो आज दुनिया भर का भरोसा जीत सका है, तो इसका बड़ा श्रेय इस संस्था का नेतृत्व करने वाले वैज्ञानिकों को जाता है। तारीफ के काबिल वे राजनीतिक नेतृत्व भी हैं, जिन्होंने वैज्ञानिकों पर भरोसा जताया। असल में, हमने अपने अंतरिक्ष कार्यक्रम की शुरुआत एक शांतिपूर्ण अभियान के तहत की थी। जहां ज्यादातर देशों ने स्ट्रैटिजिक रिसर्च या सैन्य उद्देश्यों के तहत अपना अंतरिक्ष कार्यक्रम बढ़ाया और इसमें खासी गोपनीयता बरती, वहीं हमने इसे आम आदमी को समर्पित कर दिया। यही वजह है कि हमने पहले मिसाइल प्रोग्राम नहीं, बल्कि रॉकेट प्रोग्राम विकसित किए और उपग्रहों को अंतरिक्ष में भेजना शुरू किया। देखा जाए, तो हमने सोचने का एक नया नजरिया दुनिया के सामने रखा था। इसी तरह, भारत में पिछली सदी के 60 के दशक में जब अंतरिक्ष अभियान शुरू हुए, तो इसके विरोध में आवाज भी उठी। कहा गया कि गुरुवत के दिनों में जब देश बुनियादी सुविधाओं को पाने की जद्दोजहद कर रहा है, तो भला ऐसी योजना में पूंजी क्यों लगाना, जिसका तत्काल कोई फायदा नहीं हो? मगर राजनीतिक नेतृत्व ने वैज्ञानिकों पर भरोसा दिखाया, और आज नतीजा सामने है। अपेक्षाकृत देर से कार्यक्रम शुरू करने के बाद भी आज हमारा कद अंतरिक्ष कार्यक्रम चलाने वाले तमाम देशों के बराबर है। सवाल यह है कि अब इससे आगे हम कहां जाएंगे? मेरा मानना है कि आने वाले दिनों में दुनिया भर में अंतरिक्ष कार्यक्रम का दायरा बढ़ने वाला है। आज नहीं तो कल, कई देश उपग्रह बनाने की क्षमता हासिल करेंगे। ऐसे में, उनकी नजर उन देशों की तरफ होगी, जिनके पास लॉन्चिंग पैड और लॉन्च व्हीकल तो हो ही, तब वक्त में परियोजना पूरी करने की क्षमता भी हो। इसरो ने लगातार यह साबित किया है कि वह इन तीनों में सक्षम है। हमारे लिए अच्छी बात यह भी है कि बहुत कम लागत में हम जिम्मेदारी पूरी करने की क्षमता रखते हैं। हमारा पीएसएलवी (पोलर सैटेलाइट लॉन्च व्हीकल) कम पैसों में लक्ष्य पूरा करने की काबिलियत रखता है। चंद्रयान और मंगलयान में भी हमने इसकी ताकत दिखा दी है। ऐसे में, यह स्वाभाविक ही हमारे अंतरिक्ष कार्यक्रम की रीढ़ का हिस्सा बना रहेगा। मगर इसकी भी एक सीमा है। इसलिए जरूरत है कि अब हम जीएसएलवी (जिओ सिंक्रोनाइज लॉन्च व्हीकल) में महारत हासिल करें। यह कहीं ज्यादा पे-लोड यानी भारी उपग्रह आसमान में पहुंचा सकता है। जरूरत यह भी है कि हम देश के तमाम विश्वविद्यालयों व संस्थानों में शोध की क्षमता विकसित करें। ऐसे वक्त में, जब हम शुक्र ग्रह पर जाने का सपना देखने लगे हैं, तो इस दिशा में काम करना और भी लाजिमी है। आज अंतरिक्ष अनुसंधानों के सिरमौर देश आंकड़ों को गोपनीय रखने की मानसिकता से बाहर निकल चुके हैं। वे तमाम आंकड़े दूसरे देशों से साझा करने लगे हैं। इसकी बड़ी वजह यह है कि ऐसी परियोजनाओं में इतने आंकड़े इकट्ठा होते हैं कि किसी एक देश या संस्थान के बूते उनका विश्लेषण संभव नहीं। लिहाजा यह जरूरी है कि हमारे मुल्क के ज्यादातर विश्वविद्यालयों में इन शोध से जुड़ी सुविधाएं बढ़ाई जाएं, ताकि आंकड़ों को अलग-अलग नजरिये से देखने व उनका निष्कर्ष निकालने वाले वैज्ञानिक पैदा हो सकें। संभव यह भी है कि आने वाले दिनों में ऐसे उपग्रह अंतरिक्ष में भेजे जाएंगे, जो छोटी-छोटी चिप में होंगे। किफायती व जिम्मेदार अंतरिक्ष एजेंसी होने के कारण इसरो पर दुनिया भर की नजर होगी, इसीलिए जब दूसरे मुल्क हमें अपना उपग्रह देंगे, तो उनमें मौजूद नई-नई तकनीक हमारे वैज्ञानिकों की समझ और भी निखार सकेगी। इससे हमें दो तरह के फायदे होंगे। अब तो हम नई-नई तकनीक से परिचित होंगे और दूसरा, विदेश को अपनी तकनीक की क्षमता बेचकर राजस्व कमाएंगे। बुधवार को इसरो ने बताया कि उसने जो प्रक्षेपण किया, उसकी कुल लागत का आधा उसे विदेशी उपग्रहों के प्रक्षेपण से मिल गया है। यह कमाई कुल लागत की 80 फीसदी तक हो सकती है। यह स्थिति देश में वैज्ञानिक सोच की दशा-दिशा काफी हद तक प्रभावित करेगी।

गौहर रजा, सेवानिवृत्त मुख्य वैज्ञानिक सीएसआईआर, (ये लेखक के अपने विचार हैं)