

## **ICT-Driven Development and the 2022-23 Union Budget of India**

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## Abstract

The Government of India released its 2022 Union Budget on February 1, 2022. The new budget has drawn substantial attention for, among other things, its emphasis on programs in the domain of ICT-driven development. If the ambitions described within the budget are fully realized, they would allow India to make substantial progress in equitable human development. However, the budget does not detail the funding mechanisms that would support these ambitious programs, and similar efforts have floundered in the past due to this lack of specificity. If India intends to promote ICT-driven development at the central level through its budget, then these documents should provide states and ministries concrete information on the dedicated revenue flows they will have at their disposal so that they can proceed with these initiatives in a timely and efficient manner.

## Overview of the 2022 Union Budget

On February 1, Finance Minister Nirmala Sitharaman presented India's 2022 Union Budget. An estimate of the central government's annual revenues and expenditures for the upcoming year, the Union Budget plays a key role in fiscal planning for the Government of India (GOI). Additionally, in recent years, the budget has developed into a broader statement of principles for the government. The constitutionally mandated duty of presenting the government's financial prospectus and intentions serves as a prime opportunity to detail how existing programs and planned initiatives would fit alongside the administration's other concerns. The Union Budget is not simply a fiscal document, but rather a statement of priorities, and the contents of the 2022 Union Budget should be seen through the lens of how the GOI intends to advance its ongoing mission of sustainable development throughout the country.

The 420 billion USD 2022 budget has preserved and elaborated on certain themes from prior budgets, but in other respects, it strikes out in an entirely new direction. Whereas the 2021 budget featured an overwhelming emphasis on health, given the context of the COVID-19 pandemic, the 2022 budget has made infrastructure its overriding headline priority. Budgeted capital expenditures were increased by 35%, with as much as a 50% increase in the category of roads and railways. The budget calls for a 25,000 km expansion in the national highway network, new investments in rail and cargo terminals, and a 20% increase in funding for the Jal Jeevan Mission providing infrastructure for clean, running water. When it comes to digital infrastructure, the budget proposes expanding fiberoptic networks and auctioning new 5G spectrum. Overall, some 10 lakh crore INR (130 billion USD) would be invested into infrastructure in 2022-23 alone, as part of a National Infrastructure Pipeline with an envisioned scope of as much as 111 lakh crore (1.3 trillion USD) for the period through 2025.

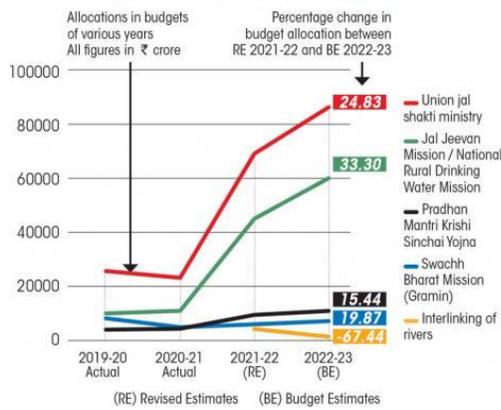
Reflecting the policy approach of initiatives such as the Smart Cities Mission (SCM), the 2022 Union Budget encourages greater levels of participation in these centrally-defined programs from state governments and the private sector. For example, after the central government covered roughly 45% of the proposed outlay, the budget's vision for the National Infrastructure Pipeline would call on state governments and private investors to provide the vast majority of the remaining funding requirements.<sup>1</sup> Initially, this would be facilitated by making 1 lakh crore INR (13 billion USD) in 50-year interest-free concessional loans to state governments. Proposed methods for facilitating increased private investment include tax concessions for pension and sovereign wealth funds, development finance through the National Bank for Infrastructure and Development (NABFID), and even green bonds. This blended finance approach, as seen in the SCM, has the potential to mobilize substantial resources in exchange for reducing the autonomy to make investments in projects which do not yield immediate profits. The types of infrastructure projects that would transform India into the global manufacturing hub that the GOI envisions include some which are highly appropriate for private finance, but others such as those providing basic population services such as potable water and sanitation which may not produce profits for decades if at all. Therefore, the ability of this blended model to attract a spectrum of investment aligned with India's development needs remains difficult to state.

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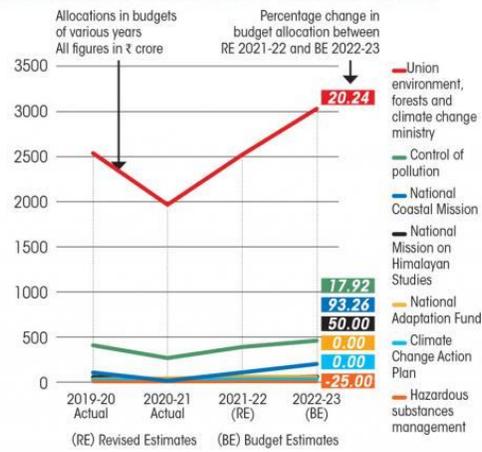
<sup>1</sup> <https://www.financialexpress.com/budget/union-budget-2022-23-govt-maintains-focus-on-sector/2426870/>

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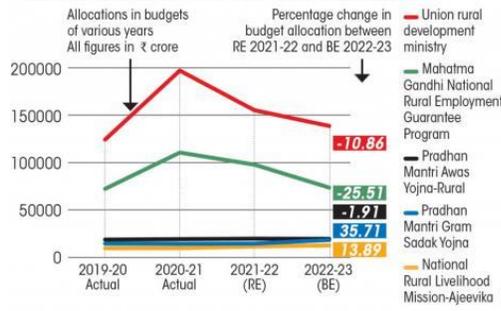
## Water: Significant increase in overall allocation



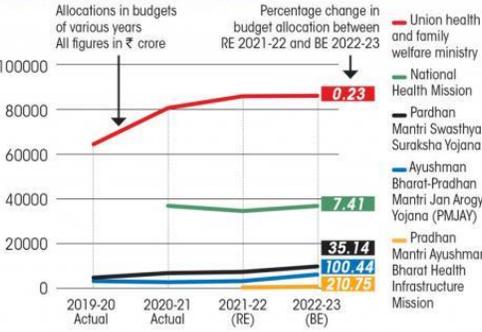
## Environment: Sizeable increase for some schemes



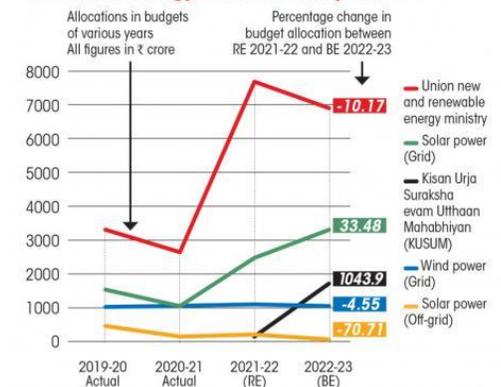
## Rural development: Dip in overall allocation



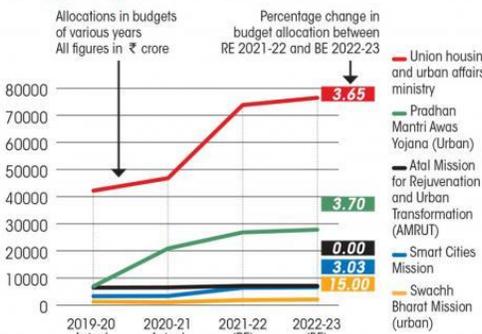
## Health: Boost for infrastructure



## Renewable energy: Focus on solar power



## Housing: Marginal rise for urban schemes



Source: Union Ministry of Finance

Source: Union Ministry of Finance

The 2022-23 Union Budget was most clearly defined by large increases in infrastructure investment, particularly for basic services like running water and urban housing. The budget has also maintained relatively high levels of investment for clean energy and environmental initiatives, although these have declined relative to 2021-22. Health investment has stayed largely stagnant despite crisis-level challenges in the healthcare sector over the past year, and investment as a whole has shifted from rural development into urban development to reflect India's increasing urbanization. ICT initiatives targeted towards agriculture are expected to help close some of this gap. Source: Union Ministry of Finance, via DownToEarth.

## ICT-Driven Development in the 2022 Union Budget

Digital India has been one of the flagship umbrella programs of the current administration, with the goal of mainstreaming digital services into Indian government, Indian industry, and the personal lives of Indian citizens. True to form, the 2022 budget features an overwhelming focus on how digital tools can be developed and implemented in nearly every area of focus.

The clearest focus on the use of digital technology in the draft budget lies in the education sector. The COVID-19 pandemic only highlighted the digital divide between urban, rural, affluent, and poor children within the Indian educational system, and the budget seeks to make ICT a driver of equality in education rather than inequality. First, the budget proposes new initiatives for expanding educational media content, such as expanding the eVidya One Class-One TV program to allow every state to use the show as a classroom supplement in every one of India's regional languages. Similarly, the budget proposes a digital university to link students across India to the best higher education available in the country, a step up in organization and rigor from the currently widespread open university model. By expanding such opportunities to previously excluded sections of the population, the budget seeks to continue India's tradition of using ICT to open up quality education to the masses.

The budget's proposed initiatives in the education sector aren't limited to the traditional or even the digital classroom. It also proposes programs which would improve the ability of Indian workers to compete in and adapt to a rapidly changing domestic and global economy. For adult learners and those looking to advance in the workforce, the budget proposes a digital ecosystem for skill development called the DESH-Stack e-portal. The portal would provide formal skill certifications, issued after a series of online trainings conducted in association with major industry partners. Members could then connect to jobs through the portal that use skills they have been certified for, creating a feedback mechanism which would encourage the participating workforce to continuously scale up their competitiveness. Similarly, the budget proposes establishing more than 750 virtual science and mathematics labs and 75 virtual training environments for vocational courses. The former of these would elevate India's capacity to expand the quality STEM education necessary for entry in high-tech manufacturing and services, while the latter would provide semi-tactile environments where students could practice trade skills under the direct guidance of experienced remote instructors. Through such initiatives, alongside an update to the National Skills Qualification Framework (NSQF) to bring key training standards in line with industry needs, the budget envisions an ICT-powered national education environment which leverages the reach of technology and adapts to regional language needs to provide inclusive, quality workforce development for a highly diverse and rapidly evolving economy. The advancement of these initiatives is provided as the main justification for an 11.86% year-on-year increase in the central education budget, for the building and maintenance both of this digital infrastructure and for the necessary physical infrastructure which must be implemented alongside it.

The next key sphere of influence for ICT in the new budget is the banking and financial sector. Since even before demonetization, the GOI has held a longstanding interest in using centrally directed policy to digitize India's financial system, and the 2022-23 budget is no exception. The document calls for a cooperative program with key commercial banks to establish "Digital Banking Units" in 75 separate districts of the country. These units would serve as foci for training rural populations in these and surrounding districts in digital financial literacy, with the overarching goal of using ICT to expand participation in the formal economy. The Finance Ministry has also proposed that RBI begin issuing the Central Bank Digital Currency (CBDC), the so-called "Digital Rupee," from fiscal year 2023 onwards. Introducing the CBDC would be an attempt to bring actors in the blockchain and cryptocurrency space under India's regulatory umbrella, and possibly using these digital asset classes not just as sources of tax revenue, but also as agents of financial inclusion and improved transparency. Alongside initiatives such as investing in universal digital postal banking, which would help India attain universal financial coverage for older populations and rural areas, these ICT-based financial sector initiatives demonstrate GOI's intentions to use digital innovations as a driver for inclusive development.

Third, new digital initiatives and investments in the health sector are described in substantial detail. On the surface, these programs offer substantial development and evolution from the current state of affairs. An open digital platform for the Ayushman Bharat National Digital Health Ecosystem will be introduced, providing digital records for health providers and facilities as well as Aadhar-linked identification and consent to improve the accessibility of treatment. In response to the mental health challenges raised by the pandemic, a National Tele Mental Health Program will be launched featuring a network of 23 remote health centers with technology support provided by IIIT-Bangalore. In addition, the new schemes Mission Shakti, Mission Vatsalya, Saksham Anganwadi and Poshan 2.0 were introduced to improve the benefits provided to women and children through the Anganwadi childcare network, providing upgrades to the digital infrastructure for as many as 2 lakh anganwadi centers. These constitute incremental, yet meaningful upgrades to India's digital health landscape. However, healthcare initiatives under the budget have not met the scale anticipated by analysts who expected them to assume a higher priority. India's healthcare system, both private and public, was swamped by the COVID-19 pandemic, leaving a tragic legacy which demanded action. Many assumed that the budget would provide for an expansion of both physical and digital healthcare infrastructure commensurate to the investments made in other sectors, both in reaction to the impact of the COVID-19 crisis and in anticipation of India's growing and future healthcare challenges. Public-private initiatives along the lines of those presented for other sectors could have filled any budgetary gaps for such programs. Unfortunately, as expressed through the budget document, the GOI has apparently made no such provisions.

Additionally, the budget provides for substantial investment in the digitization of India's agriculture industry. As the dominant economic sector for India's rural poor, expanding the use of ICT in India's agriculture space is likely to have outsized impacts on India's broader inclusive development outcomes. The budget recognizes this potential, proposing a new PPP-based scheme to deliver digital and high-tech services to Indian farmers in collaboration with public research institutions, private agri-tech businesses, and other stakeholders in the agricultural value chain. New programs are envisioned to provide more technological support, either through direct

provision of equipment such as drones for crop assessment and land record digitization, or through providing funding to back startups offering, for instance, IT support to farmers using these new technologies. Furthermore, the budget targets additional support at the intersection of ICT and Micro, Small and Medium Enterprises (MSMEs), which disproportionately operate in the agricultural sector. For instance, the document proposes interlinking the Udyam, e-Shram, NCS and ASEEM portals, merging them into a single database for G2C, B2C and B2B services. This move would be intended to improve the facilitation of business operations from accessing credit to training and recruiting talent, and could contribute to increasing formalization in the economy similarly to proposed initiatives in the financial sector.

Finally, the Union Budget presents a series of noteworthy initiatives to expand e-governance and improve on the ease of doing business. For instance, a Unified Logistics Interface Platform (ULIP) will be rolled out to provide for data exchange between various regulatory and operational frameworks. Gati Shakti, a public GIS platform, will serve as a spatial data exchange between government agencies in a similar fashion to improve coordination between various bodies and stakeholders for the many infrastructure projects presented in the budget. More incremental initiatives, like the introduction of RFID-compliant e-passports with digital functionality, the linkage of digital land records to other registration documents, and the expansion of the PARIVESH portal for environmental compliance approvals, were also rolled out. For the first time, the central government will begin relying on an online digital payment platform for procurement, simplifying communication with suppliers and contractors. Finally, in line with a new centrally-directed initiative for supporting urban planning capacity at the state level, urban design curricula will be funded, developed, and introduced with consideration for how accessibility can be maximized through tools including but not limited to ICT.

All things considered, the 2022-23 Union Budget provides an unprecedented level of funding, consideration, and detail for the ICT-based initiatives underpinning GOI's development strategy. Unsurprisingly, it has been hailed as "a budget for a digital-first India,"<sup>2</sup> with particular praise directed towards its proposed partnership approach with the startup ecosystem, its high level of ambition compared to previous budgets (and thanks to new projected tax revenues from increasing formalization), and its emphasis on using ICT as an engine for inclusion and opportunity. Nor have the drafters limited themselves to supporting ICT for development; the budget even includes proposals to provide institutional support for India's rapidly growing and increasingly competitive gaming and animation industries. Between its 5G expansions, its substantial technological upgrades for the farming sector, its expansive digital university proposals, its far-reaching digital finance initiatives, and its investments in core government digital infrastructure, the Union Budget is a document for a government which, now more than ever, sees India as a digital-first economy.

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<sup>2</sup> <https://economictimes.indiatimes.com/news/economy/policy/view-its-a-budget-for-digital-first-india/articleshow/89307586.cms>

## Improving Policy Support for ICT-Driven Development

The 2022-23 Union Budget is a document suffused with ambition both implicit and explicit. As written, the budget anticipates 8.5% GDP growth in 2022-23, which would qualify as the highest growth rate in India since 2010 with the exception of the post-lockdown recovery year of 2021-22. Looking farther into the long term, Union finance minister Nirmala Sitharaman has proclaimed that the budget is an outline for laying the foundation for India's growth and prosperity over the next 25 years, with the goal of reaching highly ambitious "Amrit Kaal" development benchmarks by the 100<sup>th</sup> anniversary of India's independence in 2047. To meet these targets, substantial progress must take place over the next several decades. Given India's aims and its needs, does the budget do enough to help India realize this sweeping vision? And does it approach India's development challenges in the most effective way?

The COVID-19 pandemic has already caused the virtual abandonment of a similar set of goals, "India@75," set in 2018 and intended to be achieved by FY2021-22. Goals which went unmet included expanding the GDP to 4 trillion USD (currently 2.85 trillion USD), increasing per-capita GDP to 3000 USD (estimated at 1258 USD for 2021-22), raising the female labor force participation rate to 30% (current value 16.9%), and most critically, doubling farmer income (real increase since 2015-16 estimated at just 13.1%).<sup>3</sup> This year, the budget for the Market Intervention and Price Support Scheme (MI-PSS) declined by 62% from 2021-22, and the similar PM-AASHA scheme to provide a minimum support price for pulses and oilseeds was slashed to near-zero, raising questions about whether the budget's authors intend to continue pursuing a goal once seen as critical or whether this could instead signal the start of a long-term shift away from direct budgetary support for rural welfare.

In service of the "Amrit Kaal" vision, the budget proffers a highly detailed sustainable vision for the whole country founded on the pillars of inclusive development, productivity enhancement, energy transition and climate action, and powered through both public and private investments. The budget also provides a near-unprecedented level of detail on what achieving these goals will look like, and on the central government's expectations for how India's state governments and Urban Local Bodies (ULBs) will be tasked with achieving these goals. But in contrast, the budget provides little to no detail on the dedicated revenue streams which would be made available for these programs. In some respects, a budget is a statement of priorities, so elaborating on big picture goals instead of the details of policy implementation is appropriate. But on the other hand, introducing so many ambitious programs without substantial detail on funding mechanisms or resources nearly amounts to an unfunded mandate from an increasingly powerful central government.

This policy approach is well within the tradition of other major initiatives championed by the current government. For instance, the Smart Cities Mission (SCM) was shaped around a core central government vision, provided minimal guidance as to the details of project form and

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<sup>3</sup> <https://www.downtoearth.org.in/news/economy/union-budget-2022-23-whither-amrit-kaal-81700>

structure, and outside of initial seed funding to kickstart state government and private funding mechanisms, involved minimal central government financial resources. But a project is only as good as its planning, and by pushing forward the SCM without making more adequate provision for its funding beforehand, the central government set the stage for a program which has struggled with sustainability, lacked focus, and resulted in few of the development benefits which were initially promised. The many ICT initiatives included in the 2022-23 Union Budget, conceived along similar lines and featuring desired objectives without similar levels of detail on how they would be paid for, are likely to meet similar ends without more substantial levels of budgetary planning from the central government. Needless to say, the same goes for key sectors which receive passing mentions in the budget without benefiting from the mention of any new programs in detail, such as the key “sunrise” emerging technology sectors of AI, green energy, and clean mobility.

If providing greater clarity on funding mechanisms for individual programs is the key barrier to this missing level of detail, then the first place to start would be elaborating on how GOI intends to improve the efficacy of the private investments which these programs would need to rely on, but for which concrete funding has not yet been secured. Ways to do this could include increasing domestic pension investments in infrastructure, expanding the definition of infrastructure investment for tax purposes, deepening the infrastructure bond market, adopting standard templates and practices for engaging with private partners, and improving contract renegotiation and dispute resolution mechanisms.<sup>4</sup> Conversely, the central government could issue detailed memoranda on its recommended implementation strategy for new programs mandated through the budget with secured sources of public funding. Such strategic outlines would serve to better coordinate the approaches of state and local governments to these decentralized national programs than the laissez-faire approach most frequently in practice today.

The 2022-23 Union Budget trades on lofty promises, but as always, its implementation will be key to its success. In the wake of the COVID-19 pandemic, burgeoning growth has returned India to a position where it has the economic base to realize these projects, and achieving success, particularly for programs in the digital sphere, will build a foundation for the greater and broader prosperity India seeks for the future. It has been said that plans are useless, but planning is indispensable. Greater central planning of India’s sustainable development trajectory, moving beyond statements of desired objectives and goals to touch on more challenging topics such as the federal distribution of revenues, policy design, and power, may not cause India to achieve its development goals in one fell swoop. But it will enable more meaningful identification of the fiscal and policy barriers to achieving these goals, and will focus energies on creating the conditions for finally and resoundingly achieving them.

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<sup>4</sup> <https://www.financialexpress.com/budget/union-budget-2022-23-govt-maintains-focus-on-sector/2426870/>

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