

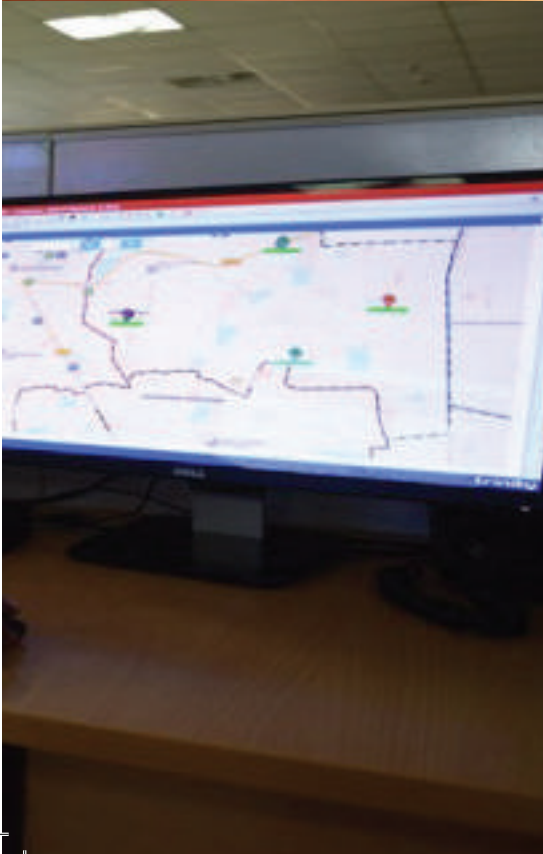


CENTRE FOR  
PUBLIC POLICY

# Karnataka Innovation Report

*Stakeholder Dialogues*









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PUBLIC POLICY

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*Stakeholder Dialogues*

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## FOREWORD



# Government As Entrepreneur

Working in the government is a balance between the routine and crisis – innovation happens somewhere in between. Governments have always aspired for larger impacts with a shrinking financial footprint, but sometimes this needs going beyond linear thought processes to identifying the right problem to solve. David Osborne's (1993) article is an early articulation of the government's role as an entrepreneurial one requiring stakeholders and decision makers to reconceptualise public problems in completely new ways.<sup>1</sup> Similarly, Innovations for Successful Societies, a unit based out of Princeton University notes that governments are often the sources of some of the most creative and successful ideas as they force individuals with deep knowledge to engage with large problems in an effort to find solutions.<sup>2</sup> In this report we explore the many innovative practices that have been carried out by the Government of Karnataka, with the goal of documenting and understanding what it achieves and how it innovatively engages with citizens.

With support from the Department of Planning, Programme Monitoring and Statistics of the Government of Karnataka we explore a large number of entrepreneurial efforts to solve public problems innovatively. To do so, we first used public access documents regarding interventions, schemes, and practices where innovative practices were reported. We invited each associated department to discuss these (and any other) innovative practices with us in a seminar format. We curated a series of 12 seminars (*See Seminar Series Details on next page*) where each seminar was directed towards learning about activities around a single theme; some themes involved multiple departments whose missions were closely aligned. Each of these themes are mapped onto the UN's Sustainable Development Goals (SDGs) highlighting the long-term impacts that such innovations may have; for example, nutrition and agriculture are jointly mapped onto the SDG goal for Zero Hunger.

Each seminar began with a department representative sharing with us details of innovations that arose in the context of a public problem. This was followed by discussions by subject matter experts (e.g. academics, beneficiaries, consultants, NGOs, etc.) who contextualized the innovation to delineate what has been achieved. Finally, each seminar closed with clarifications, questions, and discussion from the audience that represented individuals from different walks of life. Thus, the goal for each seminar was to understand how the government has been engaged in a wide diversity of public issues, assess how this changed the current status quo, and to do so in a manner that brought together multiple stakeholder perspectives.

The breadth and diversity of innovations was astonishing; in some instances, technology has allowed citizens improved access to services, in other instances, such as with the real-time police control room or the SMART grid system in Mysore, analytics has allowed service providers to deploy scarce resources in a far superior way. Similarly, some innovations have targeted vulnerable groups, like a full meal a day for pregnant and lactating women in an attempt to reduce widespread anaemia. Some others have worked in developing an ecosystem to support IT-BT start-ups from

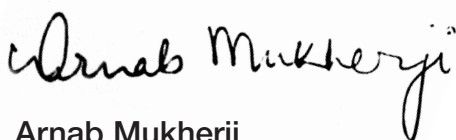
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inception to go-to-market strategies. Still other government initiatives have sought to create markets, institutions, and define innovative ways of contracting land that changes the status quo across Karnataka.

While each innovative practice emerged in a specific department, its influence has been multi-sectoral. Thus, a broad stakeholder perspective is a natural framework within which to explore an integrated impact of such initiatives. For example, innovative ways of promoting millets in agriculture, also reduces malnutrition and improves health; similarly, well managed mental health programmes can improve employment in the state. The intersectionality of well-crafted and innovative practices improves multiple development indicators and thus, naturally links to the SDGs. Bringing together stakeholders engaged with issues underlying the seminar theme helped unpack some of these interlinkages in an open, and collegial format - we have tried to capture this in our report. We have also tried to incorporate this collaborative perspective by inviting some of our subject matter experts to prepare notes for the report. This kind of engagement in the seminars and in the report truly reflects a dialogue among the stakeholders. We believe this format itself is a novel way to incorporate the multiple perspectives of a government-led intervention.

Innovation in a start-up or in the corporate sector is different from innovation in the public sector. First, attribution of who is responsible for the innovation has little bearing in a public system. Next, the churn in public office makes it harder for deep learning and engagement. In spite of this, innovation happens routinely in government. I believe Saras Saraswati's (2001) work seeking to understand how entrepreneurs think remains relevant for public organizations, too. Her insight is that an entrepreneur's engagement follows an effectual logic that seeks to create an effect by exploiting not just existing resources, but also networks, abilities and by re-imagining the problem itself to find a solvable version of it.<sup>3</sup> Our work shows that effectual logic is the cornerstone for successful innovators even in public organization. While goals are perhaps much more broadly defined in this context, there exists significant freedom in how to achieve these goals. It is in this freedom that we see governments framing schemes, rolling out products, and creating institutions that have the potential to create lasting value for society. For example, one of the most fascinating opportunities arises from the use of solar water pumps in agriculture: by linking farmers to the electricity grid, they not only receive a pay-out for each unit of electricity uploaded, but now there is an incentive to conserve water and restore the price mechanism in a world of electricity subsidies.

Ours is not an evaluation report - only time will tell which of these innovations survive and are of lasting value. Rather, I invite you to read about the ideas behind the innovations in a state government and to consider the nature of change that is possible. Thus, the next few pages showcase not only the complexities of public service, but also presents ideas on how to negotiate them.



**Arnab Mukherji**

*Chairperson, Centre for Public Policy, IIM-B*

- 
1. David Osborne, (1993) Reinventing Government. Public Productivity & Management Review, Vol. 16, No. 4, Fiscal Pressures and Productive Solutions, pp. 349-356.
  2. <https://successfultsocieties.princeton.edu/>
  3. S Sarasvathy (2005) What makes entrepreneurs entrepreneurial? Harvard Business Review UV1356-PDF-ENG

# INNOVATION SEMINAR SERIES DETAILS

## Seminar 1

**Topic:** Governance  
**Date:** December 23, 2017  
**Venue:** IIMB  
**Panel:** **Ms. Nandana Reddy**,  
*Member, Ramesh Kumar Committee*  
**Mr. Upendra Prathap Singh**,  
*Commissioner, Rural Development, GoK*  
**Mr. K Nagaraja**, *CEO, Centre for e-Governance*  
**Ms. Devika Kher**, *Takshshila Institution*  
**Mr. Manu Srivastav**, *Vice President,*  
*e-Governments Foundation*  
**Chair: Prof. Arnab Mukherji**,  
*Chairperson, CPP, IIMB*

## Seminar 4

**Topic:** Sustainability : Energy  
**Date:** January 6, 2018  
**Venue:** KAS Officers Association  
**Panel:** **Mr. P. Ravikumar**, *Additional Chief Secretary,*  
*Department of Energy, GoK*  
**Mr. G V Balaram**, *MD, KREDL*  
**Mr. Rahul Tongia**, *Fellow, Brookings*  
*Institution, India*  
**Chair: Prof. Arnab Mukherji**,  
*Chairperson, CPP, IIMB*

## Seminar 2

**Topic:** Agriculture  
**Date:** December 23, 2017  
**Venue:** IIMB  
**Panel:** **Mr. Manoj Rajan**, *MD and CEO, Rashtriya*  
*e-Market Services, GoK \**  
**Mr. Jayaswamy**, *Joint Director, Department of*  
*Agriculture, GoK \**  
**Mr. K.G. Parameshwarappa**, *Member, Agri*  
*culture Prices Commission*  
**Chair: Prof. Gopal Naik**, *Dean (Faculty), IIMB*

## Seminar 5

**Topic:** Healthcare  
**Date:** January 6, 2018  
**Venue:** KAS Officers Association  
**Panel:** **Mr. Ajay Seth**, *Additional Chief*  
*Secretary, Department of Health, GoK*  
**Mr. Sunil Kumar**, *Narayana Health, Mysore*  
**Dr. N Girish**, *Head of the Department of Epidemiology,*  
*Centre for Public Health, NIMHANS*  
**Chair: Prof. Arnab Mukherji**,  
*Chairperson, CPP, IIMB*

## Seminar 3

**Topic:** Sustainability : Water  
**Date:** December 30, 2017  
**Venue:** IIMB  
**Panel:** **Ms. Rupa**, *Joint Director, Department of*  
*Water Resources, GoK*  
**Mr. Krishna**, *Assistant Engineer, BWSSB*  
**Mr. S. Vishwanath**, *Director, Biome Solutions*  
**Chair: Prof. S Nayana Tara**, *Advisor, IIMB*

## Seminar 6

**Topic:** Nutrition  
**Date:** December 30, 2017  
**Venue:** IIMB  
**Panel:** **Mr. Manoj Rajan**, *Additional Secretary, GoK*  
**Ms. Rupa**, *Joint Director, Department of*  
*Agriculture, GoK*  
**Chair: Prof. Arnab Mukherji**,  
*Chairperson, CPP, IIMB*



## Seminar 7

**Topic:** IT-BT and S&T  
**Date:** January 13, 2018  
**Venue:** IIMB  
**Panel:** **Mr. Gaurav Gupta**, *Principal Secretary, Department of IT-BT & ST, GoK*  
**Mr. Sathya Narayan B V**, *Consultant, KBITS, GoK*  
**Mr. Naganand Doraiswamy**, *Founder & MD, Ideaspring Capital*  
**Mr. P.V. Bhat**, *Director, NIC*  
**Prof. Vijay Chandru**, *Chairman, Strand Life Sciences*  
**Chair:** **Prof. Srivardhini Jha**, *NSRCEL, IIMB*

## Seminar 10

**Topic:** Livelihood: Skill Development  
**Date:** January 16, 2018  
**Venue:** IIMB  
**Panel:** **Ms. Maulishree**, *CEO, ICT Skills Development Society, Department of IT- BT and S&T, GoK*  
**Mr. Ashraful Hasan**, *Director, Skill Development*  
**Mr. Basavaraju R**, *Executive Director, GRAAM*  
**Mr. L. Krishnan**, *MD, TaeguTech India*  
**Chair:** **Prof. S Nayana Tara**, *Advisor, IIMB*

## Seminar 8

**Topic:** Urban Development  
**Date:** January 17, 2018  
**Venue:** IIMB  
**Panel:** **Mr. Anjum Parwez**, *Secretary, Urban Development Department, GoK*  
**Mr. Bishwajit Mishra**, *Director (IT), BMTC*  
**Mr. Ashwin Mahesh**, *Politician and Social Technologist*  
**Prof. G. Raghuram**, *Director, IIMB*  
**Mr. Vinay Sreenivasa**, *Alternative Law Forum*  
**Mr. V Ravichandar**, *Chairman, Feedback Consulting*  
**Chair:** **Prof. Arnab Mukherji**, *Chairperson, CPP, IIMB*

## Seminar 11

**Topic:** Law & Justice: Legislation  
**Date:** January 13, 2018  
**Venue:** IIMB  
**Panel:** **Justice (Retd) Ram Mohan Reddy**, *High Court of Karnataka*  
**Mr. Praveen Sood**, *DGP, Karnataka*  
**Mr. Surya Prakash B S**, *Fellow and Programme, Director, Daksh*  
**Prof. Nigam Negguhalli**, *School of Policy and Governance, Azim Premji University*  
**Mr. Vinay Sreenivasa**, *Alternate Law Forum*  
**Chair:** **Prof. Arnab Mukherji**, *Chairperson, CPP, IIMB*

## Seminar 9

**Topic:** Livelihood: Education  
**Date:** January 13, 2018  
**Venue:** IIMB  
**Panel:** **Prof. R.S. Deshpande**, *Director, Bangalore Ambedkar School of Economics*  
**Ms. Narmada Ananda**, *Project Director, ICPS*  
**Ms. Kavita Ratna**, *Concerned for Working Children*  
**Dr. Jyotsna Jha**, *Centre for Budget and Policy Studies*  
**Mr. Ankit**, *Consultant, SSA, DPI*  
**Ms. Vidya Natampally**, *Board Member, IIIT Gwalior*  
**Chair:** **Prof. Gopal Naik**, *Dean (Faculty), IIMB*

## Seminar 12

**Topic:** Social Justice and Empowerment  
**Date:** January 8, 2018  
**Venue:** KAS Officers Association  
**Panel:** **Ms. Akkai Padmashali**, *Ondene*  
**Ms. Uma Mahadevan**, *Principal Secretary, DWCD, GoK*  
**Chair:** **Prof. Arnab Mukherji**, *Chairperson, CPP, IIMB*

## HISTORICAL PERSPECTIVE



**Prof. Gopal Naik**  
Dean (Faculty), IIM Bangalore.

### In Readiness To Try New Ideas

The modern state of Karnataka was carved out originally in 1956 as Mysore state and later renamed in 1976 as Karnataka. Karnataka has had a distinguished history of innovation that makes key services available for its citizens. For example, in response to the drought of 1875-76 in the kingdom of Mysore, the Krishna Raj Sagar dam was built across the Cauvery River after negotiating local, inter-state and British Raj bureaucracy. This not only implied better access to water for the otherwise dry region, but also led to other possibilities such as the generation of hydro-electricity. Further, Asia's first city to have streetlights was the city of Bengaluru in 1905. A little earlier, in 1903, the city of Bangalore also was the first city in India to have motorised vehicles. Thus, Karnataka is a land with a rich and distinguished history of using technological and managerial innovation to address public needs and to open up new possibilities for citizens. In these two pages we focus on a few public service delivery efforts initiated in modern Karnataka that were truly innovative for their time.

*Providing access to safe and clean water* is an important goal for all governments. However, access even today is not universal across India. In Karnataka, however, significant expansion of access to clean drinking water in villages was an important achievement in the 1980s. In 1983, the Janata Party came to power in Karnataka under the leadership of Ramakrishna Hegde. The Minister for Rural Development was Abdul Nazeer Sab and he is popularly credited for his efforts to provide clean drinking water to the villages. This legacy was lasting enough for him to be popularly remembered as 'Neer Sab' in many parts of Karnataka.

The innovation was in the adoption of a technology for hand pumps or borewells that had been developed at IIT in the form of a government scheme that required two hand pumps be installed in all villages with 600 or more citizens (and 1 pump for smaller villages). The scheme covered almost the entire state and brought significant relief to parched areas, especially those in north Karnataka. This was an early example of a government-academia partnership that sought to take up an idea and develop the operational needs to roll it out state-wide under the aegis of the then Ministry of Rural Development.

*Tracking Human Development Indicators* at the district level is key to understanding where poverty and deprivation is concentrated within a state – broadly termed regional imbalance in the policy discourse in Karnataka. Geographic identification within the state level is hard to do due to paucity of accurate data and problems that arise due to different units of data collection in different departments (revenue village versus census village, gram panchayat versus agricultural tracts, etc.). It is in this context, that the operationalization of the Professor Nanjundappa Committee Report enables the tracking of taluk level development indicators from 2004 -05 onwards. This is a major policy tool that has enabled the Government of Karnataka to track and compare talukas across 50 or more human development indicators.

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Relatedly, the 2005 Human Development Report for Karnataka was among the first such document at the state level and this was an important vision document in identifying human development gaps that needed to be addressed. The Report acknowledges that state spending is imperative to human development, but also notes that spending alone cannot be equated with development. It provides a unique focus on vulnerable groups such as scheduled tribes, scheduled castes, and women and children. Clear analysis and recommendations allow the Report to serve both as a record of existing development and tool for future initiatives.

*Citizen's participation in governance:* With the spread of education, and literacy among citizens their role can also change from mere beneficiaries to developing potential solutions for society that the government can take counsel from. In 1999, a body called the Bangalore Agenda Task Force (BATF) was formed under the leadership of the then CEO of Infosys, Mr. Nandan Nilekani. With membership from multiple walks of life the Task Force consisted of K. Jairaj (as member secretary), Dr. Rajaramanna, Dr. Samuel Paul, Naresh Narasimhan, Kalpana Kar, Ramesh Ramanathan, V Ravichandar, Suresh Heblikar, Anuradha Hegde and Late Dr H. Narasimhaiah. Building a collaborative body that brings government, industry and society together to focus on urban issues was tried out first in Bengaluru within the country. Many useful tools and ideas for change in government practice emerged from the functioning of BATF and similar other bodies that followed from time to time. Some of these were the well-designed bus shelters, Nirmala Bangalore (construction of hi-tech public toilets), Swaccha Bangalore (door to door waste collection system), no-bin policy, Self-Assessment Tax system, adopting the Fund-Based Accounting System to track government expenditures, etc.

*Directional mobility in the city* of Bengaluru with the Big 10 bus service has been an important way to move people within the city. BMTC has been particularly innovative in recognizing that there are specific arterial routes, 12 of them, on which individuals travel long distances. Having buses travel on this with high frequency improves mobility even if not everyone is traveling the entire route. This direction oriented travel also changes bus routing as fewer buses are needed and traffic congestion is reduced with individuals and bus routes being streamlined.

There remain many other innovative practices that have emerged from time to time in virtually every government in Karnataka. The willingness to try new ideas, finding out where the constraints in implementation are, and attempting to negotiate them have been a hallmark of governance in this state.

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1. Within a year 861 street lights and 1,639 domestic connections were installed.

<https://timesofindia.indiatimes.com/city/bengaluru/when-bengaluru-lit-up-in-1905-and-made-history/articleshow/59933606.cms>

2. *Neer* is the Kannada word for water.

## GOVERNANCE

# Deepening Democracy Through Inclusivity

*Karnataka has been a pioneer state in decentralized governance, more specifically in nurturing **Panchayati Raj Institutions (PRIs)**. In the mid-1980s, a decade before the 73rd Amendment gave constitutional status to PRIs, Karnataka had already put in place a two-tier system comprising the Zilla Parishad and the Mandal Parishad for district and village-level governance, respectively. The political and policy framework for introducing people's participation in governance and development was formalised with the passage of the Karnataka Panchayat Raj Act in 1987. In 1993, with the adoption of the 73rd amendment, the three-tier Panchayati Raj system comprising Zilla Panchayat (ZP), Taluk Panchayat (TP), and Gram Panchayat (GP) was implemented. Today, there are 30 ZPs, 176 TPs and 6022 GPs in the state. This is also one of the few states to have well-structured reservations for women and children in the PRIs. As a part of the Innovation Seminar Series, we had a detailed discussion around innovative practices in **Governance** in Karnataka in the recent past. In this report we focus on a subset of the innovations that allow us to talk about structural changes, depth of participation and accountability.*

In 2015, the Karnataka Panchayat Raj Act was modified to give PRIs greater autonomy with an increasing focus on the 3Fs - functions, finances and functionaries. This was to ensure that the government machinery at higher levels does not assume the power and authority of structures at lower levels. The latest amendment, which gave birth to The Karnataka Gram Swaraj and Panchayat Raj Act 2015, is based on the recommendations of the Ramesh Kumar Committee and is seeking to further define the devolution of powers.

Alongside, the state has also created space for adequate representation of marginalized populations

through participation of children and women in *Makkala Gram Sabhas* and *Mahila Gram Sabhas*, respectively. The Gram Panchayat *Hakkottaya Andolan* (GPHA) is one of the key innovations which focuses on children's right to participate in and work towards democracy in its truest form.

*Ballpark figures show that tax revenue for GPs has gone up by around 300 per cent since the base has been revised to the capital value of property. Some GPs near urban areas have earned even more.*

**UNDP SDGs 2017 - Peace and Justice, Strong Institutions:** Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.



Measures have also been put in place to ensure transparency and accountability, more specifically in ground-level development works. The state has leveraged the power of the internet for basic governance as well as to create instruments of accountability to ensure that the devolution of power translates into empowerment. After all, the quality of democracy is dependent on the extent of citizen participation, inclusivity and ensuring that all voices are heard, and all needs are met.

### MAPPING RESPONSIBILITIES

The new Act, which received the Governor's assent on April 29, 2015, seeks to make grassroots democracy more inclusive by giving a voice to the marginalized. It has also defined the roles and responsibilities of PRIs to allow for devolution of powers. This is a critical movement away from plain decentralization.

The most significant contribution of the Ramesh Kumar Committee, which was constituted to recommend

changes to the Panchayat Raj Act, has been a detailed activity mapping of the functionaries. Specific responsibilities have been assigned to all three tiers - Zilla Panchayat, Taluk Panchayat and Gram Panchayat. The committee looked at the *gram sabha* as the foundation for all development plans and suggested a bottom-up approach to planning. The committee also suggested that the panchayat president be considered the full-time chief executive. Continuing with the existing system of election of the president by other elected members, the committee recommended guidelines for passing no-confidence motions against the presidents and vice-presidents. Some of the key reforms brought in through the 2015 amendment can be seen in the chart alongside.

GPHA has repeatedly opposed the usurping of power of the local governments by the higher bureaucracy. As a part of the amendment committee, GPHA suggested shifts to decentralize governance and allow for greater citizen self-determination. With the new Act, for the first time in the history of Panchayat Raj in India, the devolution of the 3Fs - has been ensured, bringing the fulfillment of the 73rd Constitutional Amendment closer to reality.

The autonomy of these PRIs has been further enhanced by the way in which the state's variants of schemes such as MNGREGA and Swatch Bharat Mission have been implemented. Most of the planning and identification of needs have been bottom-up. The schemes are being processed and implemented with the help of e-initiatives. However, the effectiveness of these programmes will be proved only when the demand-driven needs of the PRIs are met.

### REFORMS IN PRIs

Below are a few important reforms incorporated in the Amended Act:

**To strengthen grassroot level decision-making, Habitation Sabha introduced in addition to Ward Sabha and Gram Sabha.**

**The term of Office of Chairperson of PRIs fixed at 5 years as against 20 months earlier.**

**50% of the seats reserved for women.**

**The constituency reservation for women/SC/ST/OBC changed from one term to two terms (5 years to 10 years)**

**Grievance redressal authorities created in all ZPs with a stipulated time-frame for action.**

**State minister status assigned to president of ZP.**

**Voting made compulsory for Panchayat Raj elections.**

**All PRI members to mandatorily declare assets and liabilities every year.**

**To enhance the resource of GPs, taxation revised based on capital value of property.**

### VOICE FOR WOMEN AND CHILDREN

Historically, Karnataka has seen significant participation by women in local governance. As many as 14,000 women were elected to PRIs in the first elections held in 1987 when reservations for women stood at 25 per cent. The new Act has mandated that 50 per cent of the seats be reserved for women making them equal partners in democratic decision making. Apart from this,



PANEL AT SEMINAR ON GOVERNANCE: (from L to R) Mr. K Nagaraja, Mr. Manu Srivastav, Ms. Devika Kher, Prof. Arnab Mukherji, Ms. Nandana Reddy and Mr. Upendra Prathap Singh

constituencies reserved for women will stay so for two terms as against just one term earlier.

What appears more significant is the stipulation that *mahila gram sabhas* must be held at least twice every year. Since 2009, *mahila gram sabhas* or women's councils have been piloted under the UN programme titled Promoting Women's Political Leadership and Gender Responsive Governance, in Karnataka. It was piloted in 100 panchayats of Mysore and Dharwad

*One way of reinforcing accountability is the use of visual reminders. Red and white ribbons are tied around trees as a reminder of the work that is pending and the work that is done. Red ribbons stand for pending work and are only replaced with white ones once the work gets done.*

districts. Today, the state has 1201 such women's councils, indicating a deeper participation which helps to highlight matters that affect women more and which are generally overshadowed in male-dominated *gram sabhas*.

But perhaps even more noteworthy is the effort to recognize children as citizens. Every GP has to now mandatorily hold *Makkala Grama Sabhas* every year, providing children with a platform to get involved in governance. GPHA focuses on children's right to participation, recognizing them as citizens with equal rights. This gives children the opportunity to meet and question authorities, discuss problems concerning their schools and villages and make recommendations to improve their quality of life.

Determination of tasks for these children citizens is driven by needs. With organized participation, these gram sabhas are made more meaningful and direct.

Reservations are made on the basis of gender, caste, linguistic and religious profiles. It positively discriminates in favour of those who are working children, tribal children and those children who are below the poverty line.

The ease with which these children have carried out governance-related activities emphasises on the need to seek more accountability, inclusivity and focus on immediate needs of the community.

### GREATER ACCOUNTABILITY

Karnataka's efforts at using technology to create greater transparency has received national recognition. For three years in a row, the RDPR department has received a national award for transparency. Every major file signed by the minister is immediately put up on the departmental website for public scrutiny. With all the material already available on the website on a day-to-day basis, there has been a plunge in the number of RTI queries that the department handles. Working with NIC engineers, the state designed a system called *Gandhi Sakshi Kayaka* (GSK), which has all the details

of every small piece of work sanctioned through the RDPR department. It has details of estimates, details of work done, GPS marked photographs of the work at various stages of completion, clearance and payment details. This is apart from using the internet for basic governance.

Another major initiative called e-Swathu was launched to overcome the many loopholes in the jurisdiction of gram panchayats and bring about transparency in property transactions. It has been implemented from 2013 to control illegal property transactions. The software has made it possible to control sale and registration of illegal properties in the jurisdictions of gram panchayats.

Predictably, the state has not only used the Internet of Things for basic governance but has used it to infuse a culture of accountability that is much needed in democratic decision-making.

### Comments from the Chair



**Arnab Mukherjee**  
Chairperson, Centre for Public Policy, IIM Bangalore.

The seminar focussed on the different ways that self-governance around the gram panchayat has been strengthened in Karnataka through innovative measures initiated by the RDPR Department and other key stakeholders. Amendments to the Karnataka Gram Swaraj and Panchayat Raj Act to ensure devolution of powers, better representation of issues of minorities through minority-specific gram sabhas (particularly for women (Mahila Gram Sabhas) and children (Makkala Gram Sabhas)), and developing a schedule for defining responsibilities and financial devolution present opportunities to strengthen the Panchayati Raj system. Credible steps have been put in place to offer e-services which have brought governance closer to people in Karnataka.

### OTHER E-INITIATIVES

<p><b>Bapuji Seva Kendra:</b> Delivers government services in rural areas</p>	<p><b>GSK Mobile App:</b> Captures the geo-tagged photos of all development works</p>
<p><b>Panchamitra:</b> Separate web portals for GPs; provides general information, property details, tax details, balance sheets</p>	<p><b>e-Parvathi Mobile App:</b> Collects tax through the Android-based app; synchronized with Panchatantra application</p>
<p><b>TP &amp; ZP Portals:</b> Provide information on scheduled events, general information, tenders, circulars, action plans</p>	<p><b>Digital Library:</b> Makes texts, topics, books, novels, newspapers available through e-technology</p>

## AGRICULTURE

# E-initiatives To Improve Farm Income

*The share of agriculture in Karnataka's state GDP has been progressively declining as has been the area under cultivation. Successive years of drought have added to agrarian complexities with people moving out of the sector for a living. Yet, it still employs more than half the population of the state and its preservation and growth is a necessary condition for equitable income distribution. It is also important as it brings in price stability and food security. The challenge, therefore, is to make farming remunerative. To that end, Karnataka has adopted one of the most effective technology interventions in agriculture marketing. It has also put in place innovations for harvesting water to reduce dependence on the monsoon. As part of the Innovative seminar series, we had a detailed discussion on the innovative policies that have been implemented in the **Agriculture** sector in the recent past. This report focuses on some of the practices that have the potential to improve farmers' yields through reduced costs, better price realisation and stable prices.*

Approximately Rs. 35,000 crore worth of produce is transacted in the state's agriculture markets or APMCs. But the amount that comes back to the farmers is almost negligible due to a plethora of reasons - fragmented markets, information asymmetry, indifference to quality, low transparency, opaque bidding process and lack of financial linkages.

Perhaps one of the most powerful innovations in this space has been the creation of ReMS to address the above challenges. The state government, along with NCDEX eMarkets has established a joint venture called Rashtriya eMarket Services (ReMS) to bring in efficiency and transparency in agricultural marketing. ReMS provides a unified market platform (UMP), brings in best practices, arranges assaying facilities, enables

commodity funding to benefit all stakeholders and develops secondary markets to benefit primary market participants. Of the 162 main markets in the state, 158 have been brought on this unified platform and farmers are provided with competitive prices. Around 36,000 traders have been issued with single unified licenses, enabling them to trade in all markets in the state.

*ReMS provides a unified market platform (UMP), brings in best practices, arranges assaying facilities, enables commodity funding to benefit all stakeholders and develops secondary markets to benefit primary market participants.*

**UNDP SDGs 2017 - Zero Hunger:** End hunger, achieve food security and improved nutrition, and promote sustainable agriculture.

**Life on Land:** Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss



UMP is an online platform for farmers which brings about transparency in price discovery. It enables farmers to sell their produce online in any market of their choice. In other words, the farmer is no longer confined to his/her local market and at the mercy of middlemen as the entire state is now one consolidated market. The farmer can go through prices that have been quoted by traders online and accept the one that suits him or her best. UMP allows for each farmer to document his or her end-to-end pay process. About 48 lakh farmers have registered on the system. There is a high level of transparency in this market. Once a deal is closed, SMSs are sent across to each farmer, and invoices are generated replacing the old white paper slips. TV screens in APMC yards display market prices. This platform has boosted competition and today more than 1000 traders are buying from one market. The scientific storage of data empowers farmers and ensures that distress sales are avoided.

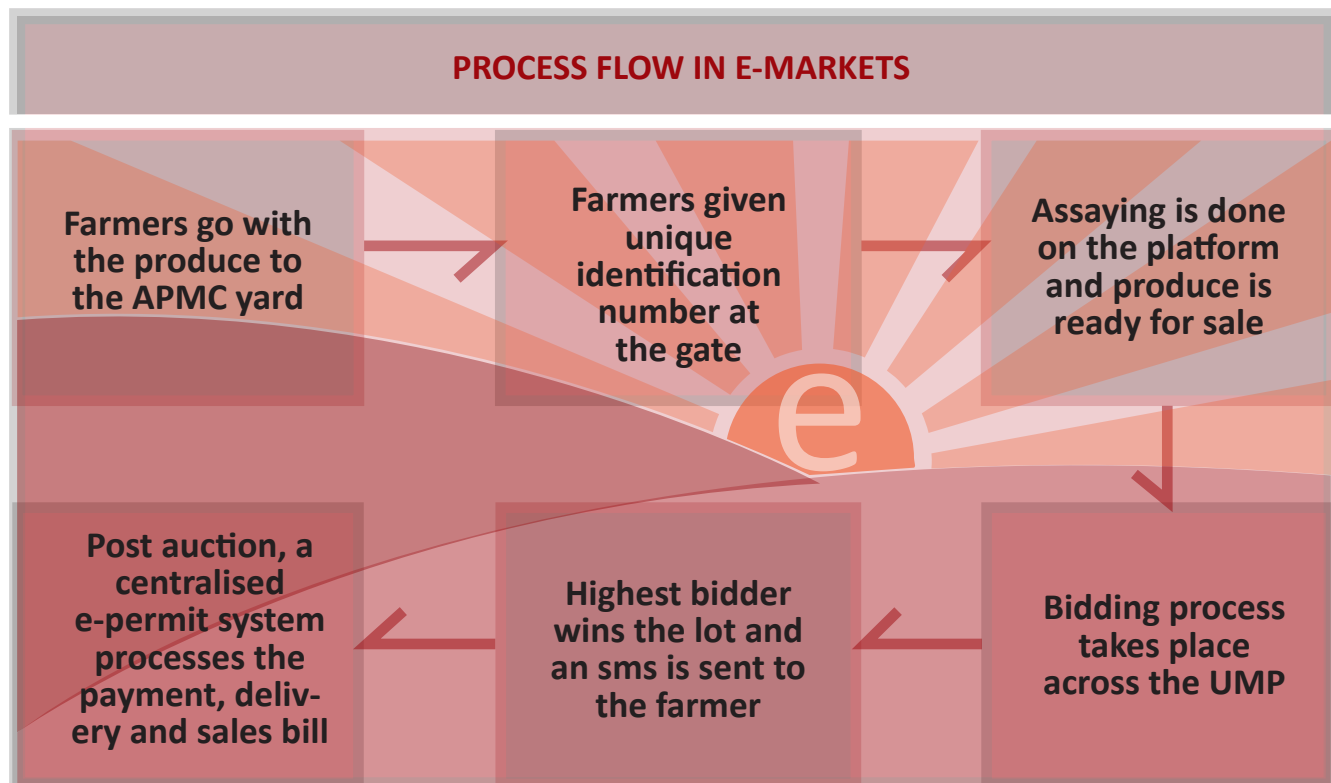
This apart, cleaning and grading units have been established in 61 APMCs. There is a push to establish warehouse-based sales with the help of online transactions. Farmer to farmer teaching programmes

have been initiated and over 20,000 villages have been made aware of the benefits of UMP.

According to a report by NITI Aayog, Karnataka has realized 38 per cent more income to farmers in 2015-2016 over 2013-2014. The UMP has brought about transparency, efficiency and has simplified the procedure for procuring licenses. Noting the success of this model in Karnataka, other states are also planning to replicate the system. Some of the markets in Andhra Pradesh have already implemented the model. Currently, 158 main markets in Karnataka are using e-trading, e-permits, e-payments, scientific grading and assaying services.

### FAIR PRICING

The state government has established an Agriculture Price Commission to look into all aspects of production, marketing and pricing of agricultural commodities. The price commission advises the government on evolving a balanced and integrated price structure on a scientific basis for farm commodities. It suggests measures to enhance the bargaining power of the farmers. It





PANEL AT SEMINAR ON AGRICULTURE: (from L to R) Prof. Rajeev Gowda, Mr. Jayaswamy, Prof. Arnab Mukherji, Mr. Manoj Rajan, Prof. Gopal Naik and Mr. K.G.Parmeshwarappa

also enables policy makers, researchers and farmers for appropriate decision-making, by providing real time information. It also acts as a liaison between the commission for agricultural costs (CACP) and the state government.

In collaboration with agriculture and horticulture universities, the Agriculture Price Commission has established a permanent structure for estimating cost of cultivation (COC). The estimation of the cost of cultivation of farm commodities is done scientifically on a regular basis. A web-based online software has also been launched for gathering the COC and to carry out output generation. The commission has collaborated with Microsoft Ltd to develop multivariate models for supply and price projection by using cloud-based technologies. This is emerging as a platform to bring together all stakeholders concerning the farming community - farmers, researchers and policy makers - through dialogues and policy studies. Perspective reports can also be prepared regularly on agriculture

### IMPACT OF YANTRA DHARE

**7.90 lakh farmers have benefitted**

**30% reduction in cost of cultivation of ragi with use of reaper and thresher**

**38% reduction in cost of cultivation of red gram with use of seed and drill and reaper**

and horticulture commodities to enable policy decisions by the government in terms of market intervention and support price. The commission has taken up an action research in collaboration with the Indian Institute of

Plantation Management (IIPM) to introduce commodity futures and hedging for price risk management. The cumulative objective is to maximise the farmer's share in the price to the consumer and achieve fair pricing mechanism that will make agriculture remunerative.

***According to a report by NITI Aayog, Karnataka has realized 38 per cent more income to farmers in 2015-2016 over 2013-2014. The UMP has brought about transparency, efficiency and has simplified the procedure for procuring licenses.***

### ACCESS TO EQUIPMENT

Addressing the constraints in agricultural operations and as an effort to enhance productivity, *Krishi Yantra Dhare* provides farm machinery and equipment on custom hire service basis. The objective of this programme is to provide small and marginal farmers with access to high-tech farm machinery. This public-private partnership programme aims at establishing one equipment rental center in each *hobli* of the *taluks*. The hiring and service charge of the farm machinery is fixed by the district' implementation committee and varies according to local market rates. Farmers can select the equipment based on their needs. To optimize the efficacy of this service, the centers have been provided with equipment suitable for local cropping patterns in each area. Each of these centers have farm equipment worth up to Rs 60-70 lakhs and the rentals are estimated to be 30 per cent lower than existing market rates.

Each customer hire service center keeps equipment for the following:

Land development; tillage and seedbed preparation; Sowing and planting; Inter cultivation; Tractor/power tiller mounted/power operated hi-tech P.P.; Harvesting and threshing; Residue management; Post-harvest and agro-processing; Diesel pump sets

### REDUCING DEPENDENCE ON RAINS

In an arid state like Karnataka there is a high need to promote on-farm rainwater conservation for agriculture. Schemes like *Krishi Bhagya* and *Krishi Honda* have been implemented to encourage efficient use of

rainwater through the adoption of modern technologies. Drip and sprinkler irrigation methods enable farmers to irrigate standing crops as and when required during the cropping season. The *Krishi Honda* scheme involves creation of polythene-lined farm ponds to harvest rainwater. The lining prevents loss due to seepage or evaporation. The primary aim is to make water available at all critical points in the cropping cycle. The ponds also rejuvenate the groundwater table and provide drinking water to cattle. For more on this, read the chapter on Water.

Another innovation which is expected to result in sustainable management of water and energy on agriculture farms is *Surya Raitha*. The project, which is a part of Karnataka's Solar Policy 2014-2021 allows farmers to install solar-powered irrigation pumpsets with 90 percent subsidy from the government. Any excess power that is left after irrigation can be sold to the government. This indirectly helps save water. The cumulative impact of these innovations is likely to be positive on households dependent on agriculture.

### Comments from the Chair



**Prof. Gopal Naik**  
Dean (Faculty), IIM Bangalore

The seminar focussed on activities and practices that have the potential to improve farmers' yields through reduced costs, better price realisation and stable prices of agricultural produce. For example, the online agri-market that scales decentralized production to enable a unified platform for selling produce, is enhancing competition and enabling quicker transactions. By integrating separate mandis, the unified platform has helped farmers realise significant gains in prices and reduction in middlemen. Similarly, the *Krishi Yantra Dhare* allows farmers to rent out agricultural equipment. This market-based intervention has reduced risks and made available capital equipment at prices that are lower than the open market price. All of these interventions, whose impact is likely to be positive, will enhance welfare of households dependent on agriculture.

## SUSTAINABILITY : WATER

# Moving Towards A Drought-Proof State

*Karnataka is the second most arid region in the country after Rajasthan. It receives minimal rainfall, which is sporadic and unevenly distributed. The state has faced four successive years of drought including the year that has just gone by. While agriculture, which is heavily dependent on the southwest monsoon, has suffered huge losses, urban areas have also faced supply challenges. This has accentuated the need for sustainable water management. Conservation is a major concern. The state government has implemented some innovative schemes to enable sustainable management of water. As part of the Innovation Seminar Series, we discussed ways in which the state has worked towards harnessing **Water** resources in the recent past. In this report we focus on some of the innovative approaches for improved access, storage and utilization. Some of the ideas in this report have come from other discussion sessions on related topics.*

Efforts to drought-proof Karnataka has seen a multi-pronged approach involving different departments of the government. The Agriculture Department's flagship scheme *Krishi Bhagya* converged with activities of the Watershed Development and Micro Irrigation departments to offer an integrated approach.

The primary objectives of *Krishi Bhagya* were to make water available during critical stages of crop growth, conserve rainwater on the farms and use it efficiently for irrigation. In the long term, this is expected to make water available for agriculture throughout the year.

Innovative engineering techniques have been used to create *Krishi Hondas* or farm ponds to hold amounts of water as per farming needs. The government has assisted in creating these polythene-lined water storage ponds on the fields to prevent water seepage, evaporation, and store run-off rainwater. This is an

*Only a little over 36 per cent of the total land area under cultivation in the state has access to some form of irrigation, leaving most areas rain fed. In other words, close to 65 per cent of the total area under cultivation is open to the vagaries of the weather.*

effective water harvesting structure, especially for small and marginal farmers. The rainwater collected is used for irrigation, to recharge groundwater or borewells and to provide drinking water to farm animals. The dimensions of these ponds are calculated based on crop requirement and nature of the soil. About 1.6 lakh ponds have been created so far.

The scheme also offers pump sets for lifting water from

**UNDP SDGs 2017 - Clean water and Sanitation:** Ensure availability and sustainable management of water and sanitation for all.



the ponds and drip irrigation sets. Innovative drip and sprinkler irrigation methods, which have been adopted by close to four lakh farmers, allows them to irrigate standing crops as and when required. This form of protective irrigation and insulating farmers from deficient rainfall is most likely to positively impact farm income levels.

Support has also been provided for high-end poly roofs over a section of the farms to grow exotic vegetables under a shade to ensure continued income and protection from debt for farmers, irrespective of the quantum of rain.

To understand the import of the above activity, we need to look at some critical data. Only a little over 36 per cent of the total land area under cultivation in the state has access to some form of irrigation, leaving most areas rain fed. In other words, close to 65 per cent of the total area under cultivation is open to the vagaries of the weather. As per Agriculture Department data, the gross area under cultivation in the state in 2014-15 was 122.47 lakh hectares. Of this, 102.26 lakh hectares were under agricultural crops.

The main source of irrigation were tubewells or

borewells, random use of which can cause a depletion of groundwater. At least 39 per cent of the area under irrigation were serviced by borewells or tubewells. Tanks accounted for barely four per cent of irrigated land. Thus, there is a crying need to shift dependence from groundwater and rainwater to surface and harvested water.

SOLAR IRRIGATION PUMPS

One of the indirect benefits of the introduction of solar energized irrigation pump sets is conservation of water. The *Surya Raitha* scheme launched recently is innovative in that it allows a farmer to go off-grid while introducing a parallel source of income. A farmer can install a subsidized, solar-energy-run pump set. Any excess solar power that is left after irrigation can be sold to the government. This indirectly helps save water.

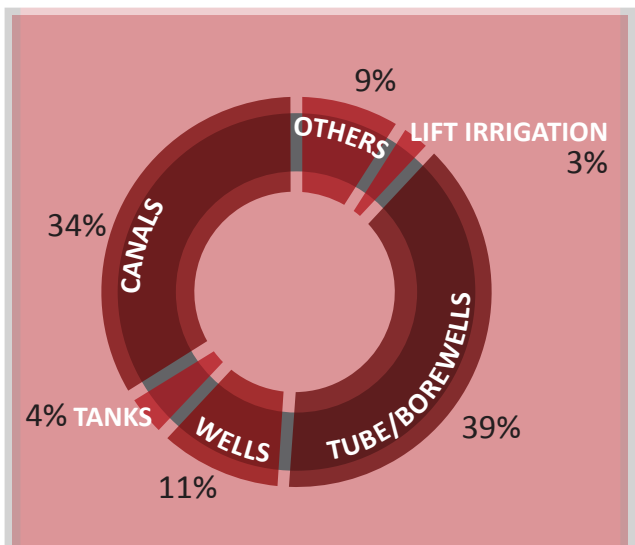
USE IN URBAN SPACES

The Koramangala-Challaghatta Valley project aims at filling treated waste-water in close to 150 tanks in drought-prone Kolar and Chickballapur districts. This project is one of the first in India to use secondary treated water for agricultural purposes. The project also aims at recharging the groundwater surrounding the lakes, making water available to farmers. For more on this, read **Re-using waste-water for agriculture**.

An innovation in the form of Water ATMs is trying to tackle the problem of lack of safe drinking water. With the installation of the Water ATMs across the city, citizens can now get access to safe drinking water round the clock at a small cost. The automated water dispensing units are solar powered and cloud connected, thus making it possible to track the quality of water and the transactions remotely.

*The primary objectives of Krishi Bhagya were to make water available during critical stages of crop growth, conserve rainwater on the farms and use it efficiently for irrigation.*

SHARE OF IRRIGATION SOURCES



Source: Department of Agriculture, GoK



PANEL AT SEMINAR ON SUSTAINABILITY - WATER: (from L to R) Mr. S. Vishwanath, Prof. Arnab Mukherji, Ms. Rupa and Mr. Krishna. The session was chaired by Prof. S Nayana Tara (not in pic).

## Re-Using Waste-Water For Agriculture

*If the population projection for Bengaluru in the draft Revised Master Plan for 2031 holds true, the water demand for the city would be as high as 3000 million litres per day.*

Cities are not only dense human habitations engaged in non-agricultural activity but can also be seen being part of a vast water flow arrangement. Take the city of Bengaluru with a population of approximately 11 million people as of 2018. The draft revised master plan for 2031 prepared by the Bengaluru Development Authority estimates the population of the city to be around 20 million-plus by 2031. This means that the water demand for the city would be as high as 3000 million litres per day. The city then becomes like a diffused dam, receiving and leaving out large volumes of water daily. Currently, the city gets 1400 million litres per day. It is estimated that at least an additional 400 million litres per day could be pumped from groundwater through borewells. Of the 1800 million litres, 80 per cent or about

1440 million litres could be converted to waste-water and flows through the three major valleys of the city. This waste-water is nutrient rich but full of pathogens. It is collected or will be collected in 24 Waste-Water Treatment Plants (WWTPs) which have been built or are

*The project seeks to supply 440 million litres of secondary treated waste-water from some sewage treatment plants of Bengaluru city to fill the lakes of drought-prone Kolar and Chikballapur districts and provide irrigation water for farmers through the recharge from these tanks.*

under construction. This treated waste-water is led into natural waterways for now though some of them are being reused by industries.

The **Koramangala and Challaghatta valley** (KC Valley) waste-water treatment plants are located close to Bellandur and Varthur Lakes, large lakes in Bengaluru now fully contaminated with untreated waste-water. This combination of treated and untreated waste-water flows from these lakes into the Dakshina Pinakini river. Farmers all along the river have been using these waters, even pumping it far distances, for irrigation purposes. Looking at the availability of large volumes of treated waste-water and its possibility for agriculture reuse, the project by the Minor Irrigation Department seeks to pick up 440 million litres per day of secondary treated waste-water from the K & C treatment plants and pump it to the drought-prone districts of Kolar and Chikballapur. Pumping will be in stages and will fill up 137 tanks in these two districts. It is expected that the groundwaters surrounding the lakes will be recharged and thus become available through wells and bore-wells for the farmers to use on their fields. The industrial zone near Narsapura in Kolar District will also get access to some of this groundwater.

#### A CITY'S OBLIGATION TO FARMERS

This project is one of the first in India to formally use secondary treated waste-water at such a volume to fill the tank ecosystem and provide water for agricultural use. It sees the obligation of a city to the farmers who grow food and vegetables for it, understands the distress that they are facing due to drought and seeks to provide nutrient-rich treated waste-water for their irrigation needs, thus ensuring livelihood security for the farmers and food security for the city. With the tanks being full, an enhancement in the bio-diversity of the locale can be expected. The two rivers, Dakshina Pinakini and Palar, can expect minimum flows and upto 500 tanks in the basin can get filled eventually.

#### WAY AHEAD AND PRECAUTIONS

Proper monitoring systems need to be in place to ensure that waste-water gets treated effectively and meets the norms set for irrigation of crops proposed to be grown using it. Online monitoring at the sewage treatment plants and the first pumping stations would help in

ensuring mitigation of health and environmental risks.

A water balance study for each lake with aquifer mapping would help in understanding the recharge zone and the benefit area as well as overflow design required during rains. An intensive farmer education programme should be undertaken and a recommended crop palate to be grown should be developed. The recommended dose of fertilizers will change since these waters will be nutrient rich. The assistance of the University of Agricultural Sciences should be taken to ensure this.

Crops such as mulberry, which are non-edible, can be considered along with horticultural crops which are less likely to face contamination issues with the application of the waste-water to be grown. Drinking water sources near all these tanks, both public and private, will need to be monitored regularly. A multi-disciplinary monitoring system should be in place for the project results to get maximum benefit.

**S. Vishwanath,**

*The author is Director of Biome Solutions*

### Comments from the Chair



**Prof. S Nayana Tara**  
Advisor, IIM Bangalore

The seminar focussed on different ways of harnessing water resources in the state and identified a few innovative projects that have improved access, storage, and utilization. The agriculture department has used innovative engineering techniques to develop village agricultural ponds, or krishi hondas, to provide protective irrigation against deficit rainfall to secure the farmer's livelihood. The KC Valley project seeks to take polluted water from the Kormangala Chellaghatta Valley through a series of sewage treatment plants and bring clean water to recharge lakes and tanks in rain deficit regions. Initiatives of this nature, if implemented with strong monitoring and remedial action, can in the long-term prove beneficial.

## SUSTAINABILITY: ENERGY

# Harnessing The Power Of Solar Energy

*High rate of urbanisation in Karnataka has also led to a high demand for energy and power supply across the state. As against a total installed generation capacity of 15,052 MW in fiscal year ending 2015, the demand was 62,643 million units during the same period. The energy consumption in the state for 2022 is projected at 86,281 million units. To meet this high demand, the state is looking at renewable energy sources in addition to conventional ones. This has given rise to numerous technological innovations in the sector. Efforts are being made to capitalize on solar energy (that the state receives in abundance), especially for rural areas, a spin-off benefit of which is water conservation in a drought-prone state. The Solar Park and Surya Raitha schemes are cases in point. As part of the Innovation Seminar Series, we held a discussion on innovations that have taken place in the **Energy** sector. In this report we focus on several initiatives that have been pioneered in the state to promote the sustainable generation of energy.*

Karnataka is rich in solar resources. It is blessed with about 240 to 300 sunny days with solar radiation of 5.4 to 6.2 kW/m<sup>2</sup>/day. It was the first southern state to introduce a solar policy in 2011. The policy has taken effect from 2014 and will remain in force until 2021. The objective of the policy is to encourage decentralised generation and distribution of energy where access to grid is difficult.

To set the process in motion, the Karnataka Renewable Energy Development Limited (KREDL) and Solar Energy Corporation of India (SECI) jointly formed Karnataka Solar Power Development Corporation Limited (KSPDCL) in 2015 for the development of ultra-mega solar parks in backward districts. The first such park is being developed in the Pavagada Taluk of Tumkuru district. Interestingly, this region has been declared drought-hit 54 times in the past 60 years. The park

***To set up the solar park, the government obtained 13,000 acres of land from farmers on a lease for 28 years. These farmers continue to be virtual owners of the land and receive lease charges.***

has changed the socio-economic landscape of the place - generated jobs, created ancillary units, brought in services, increased consumption and has effectively stemmed migration of youth.

To set up the park, the government obtained 13,000 acres of land from farmers on a lease for 28 years. The farmers continue to be virtual owners of the land and receive lease charges of Rs. 21,000 per acre per year with 5 per cent escalation every two years on the base

**UNDP SDGs 2017 - Affordable & Clean Energy:** Ensure access to affordable, reliable, sustainable and modern energy for all.



rate. Besides providing income to the farmers, the park looks at generating 4,000 jobs for the local youth. The government also helped process the land documents to establish ownership rights, thereby preventing a stranglehold of middlemen. KSPDCL, which is responsible for building the infrastructure, auctions out plots in the park to solar power developers, who then start the process of generation.

The park is expected to generate 2,700 MW of solar power by end-2018, of which it has already started generating 500 MW. Electricity Supply Companies are getting 90 per cent of the power generated from the Pavagada Solar Park at a tariff ranging between Rs 2.50 and Rs 3.31. Once ready, this will be the world's largest solar energy park.

RENEWABLE ENERGY SOURCES		
Renewable Energy Sources	Installed Capacity in MWs	% of total RE Projects
Wind	3840.36	45
Small Hydro	851.96	10
Bio Mass	134.03	01
Cogeneration	1538.16	18
Solar	2206.38	26
Total	8570.89	100

**Surya Raitha:** One of the most innovative schemes in recent years has been the *Surya Raitha* which has been piloted in Kanakpura. As a part of the scheme solar power panels are installed in farm lands to run irrigation pump (IP) sets. The excess energy left after irrigation activities is fed into the grid for which the farmer is compensated. The scheme is specifically proposed for IP sets on dedicated agriculture feeders. Solar pumps are promoted under the net metering concept, where the net meter will register both import and export of energy. The billing is settled as per the net meter readings.

The local farmers co-operative society has a role in

implementing this scheme, ensuring a buy-in from users. In collaboration with BESCOM, the society works towards educating and enrolling farmers, supervise maintenance of the solar system, collect the initial contribution from farmers and work towards processing interest-free loans from BESCOM to fund the programme. The society also monitors the farmer's compliance with the programme and checks illegal usage. The functionality of the scheme will be automated through an ESCROW structure.

This scheme is a move towards reduction of subsidized energy to agricultural customers and aims at bridging the energy deficit in the state through a unit-level approach. Surya Raitha also helps conserve water. *For more on that refer to the chapter on Agriculture.*

Solar Rooftop Policy incentivizes installation of grid connected rooftop solar systems on residential, commercial, industrial buildings and institutions. The electricity needs of the building can be met with the help of this and the excess electricity can be fed into the local grid, which can generate basic revenue. The government subsidizes 30 per cent of the cost of domestic solar panels. For the rest, individual residents can avail home loan or home improvement loans, loans under priority sector lending, up to Rs 10 lakhs.

OPTIMISING USAGE

The Chamundeshwari Electricity Supply Company (CESC) has implemented the smart grid project in Mysuru to ensure better power supply-demand management. Mysuru is the first city in the country to have implemented the smart grid project under the PPP model.

Advanced Metering Infrastructure (AMI) is made available for residential, industrial and commercial consumers which can carry out remote meter reading, remote connection or disconnection and carries out real time load monitoring and load curtailment. Load curtailment is ensured by enabling brown out instead of black out, by interrupting the power supply if the consumer's load is beyond the set limits and by restoring the power supply once the load is reduced. The smart grid enables



PANEL AT SESSION ON SUSTAINABILITY – ENERGY: Participants included Mr. P. Ravikumar (second from left facing the camera), Mr. G V Balaram (to his left) and Mr. Rahul Tongia (to the right).

periodic updates for consumer engagement on the consumer portal which stores energy consumption profiles. The consumer receives pre-planned outage notifications, energy usage notifications and the usage restriction notifications. The consumer is also able to lodge grievances on this portal.

### INNOVATIONS IN BESCOM

BESCOM has formed a technological innovation center that is backed by an innovative council which looks at innovations in industry and academia. Some of the innovations are below:

**Solar DC Inverterless System** has been implemented with the integration of DC power from solar, AC power from the grid and DC power from the battery. The power consumption, load usage and system performance

at each home can be monitored. The design of the transformer is aesthetic and does not block pedestrian pathways.

**Smart LED Lighting** has been installed in Cubbon Park in Bengaluru. Smart digital display system has been integrated into this and the sensors are able to capture motion, temperature and air quality of the area it is installed in. Fiber optic cable has also been installed within this to enable efficient surveillance infrastructure.

**Centres for excellence** are platforms where BESCOM officers work together with academicians to help address problems with a different perspective. Small-scale models are developed at these centers that focus on incorporating the smart grid with conventional and renewable energy sources. The objective of these centers is to empower and enable students and faculty

to acquire state of the art technology in the specific fields.

### PROMOTING ELECTRIC VEHICLES

Karnataka is the first state to announce an Electric Vehicle (EV) policy. The policy has special provisions for EV manufacturing units. It provides support for charging infrastructure, research development and skill development. It has also identified land for such units. Under the policy, separate tariffs need to be finalized for individuals and the commercial segment. However, there is a need for some comprehensive planning to see this through. For example, fast charging of vehicles can affect the power grid dynamics and demand supply chain. There also needs to be a robust communication link with grid operations and effective sustainable infrastructure; this needs to be created at vital locations.

*The co-operative society has a role in implementing the Surya Raitha scheme, ensuring a buy-in from users. In collaboration with BESCO, the society works towards educating and enrolling farmers, supervising maintenance of the solar system.*

### CONSUMER FRIENDLINESS

A cloud-hosted analytical platform has been set up for consumer data analysis with information of billing data, meter data and usage pattern. The objective of this is to create an effective engagement plan through digital or traditional media with the consumers. It enables consumers with necessary insights that help in achieving energy efficient goals, demand supply management, and revenue enhancement through cost optimization. This gives access to real time data analysis to understand and review customer behavior, revenue, collections and consumer complaints. With the help of the past two years' data on energy consumption, it enables forecasting of energy consumption for the next three months.

BESCOM has also developed a mobile application

to enable interaction with consumers. The mobile application provides generic information about BESCOM – on tariff, policies, schemes and offices. Information on scheduled and unscheduled outages is also made available. It allows for the registration of one or more accounts and gives information on consumption, billing and payment history. Online payment of bills can be done through this app. The app also registers complains, conducts surveys and provides for feedback for the consumers.

### Comments from the Chair



**Arnab Mukherjee**

Chairperson, Centre for Public Policy, IIM Bangalore.

The seminar focussed on the different ways that self-governance around the gram panchayat has been strengthened in Karnataka through innovative measures initiated by the RDPR Department and other key stakeholders. Amendments to the Karnataka Gram Swaraj and Panchayat Raj Act to ensure devolution of powers, better representation of issues of minorities through minority-specific gram sabhas (particularly for women (Mahila Gram Sabhas) and children (Makkala Gram Sabhas)), and developing a schedule for defining responsibilities and financial devolution present opportunities to strengthen the Panchayati Raj system. Credible steps have been put in place to offer e-services which have brought governance closer to people in Karnataka.

## HEALTHCARE

# Building Robust Healthcare Systems

*In 2017, Karnataka became the first state in India to announce a Universal Health Coverage (UHC) programme. The state has a history of pioneering healthcare programmes as well as community-based monitoring of health services through pilot projects. For instance, 15 years since its implementation, Karnataka's Yeshasvini Co-operative Farmers Healthcare Scheme continues to be one of the largest self-funded healthcare plans in the country. Similarly, the Bellary Model of district mental health programme (DMHP), implemented by the government of India under the national health care programme, has been instrumental in integrating mental healthcare in all public healthcare institutions. As part of the Innovative Seminar Series we had a detailed discussion on the innovative **Healthcare** policies and practices in the state. In this report we look at the innovations that aim to make comprehensive healthcare services affordable and accessible to the state's population of over 6.6 million.*

According to the World Health Organization (WHO), there are six building blocks to a strong healthcare system - health services, human resources, health financing, medicines and technologies, health information and governance. As one of the pioneering states in the country to provide comprehensive public health services to its people, Karnataka is among the few states in India that has successfully managed to adopt a multi-pronged approach to building public infrastructure and robust health systems.

Even as India's national health policy looks at achieving UHC by 2030 in keeping with the Sustainable Development Goals (SDG), Karnataka is the first state to plan out a comprehensive plan to that effect. Good health services, as WHO puts it, are those which deliver

effective, safe, quality, individual and population-based health interventions to those who need them, as and when required, with optimal use of resources, at a cost that the individual and community can afford.

In Karnataka, there are a combination of health insurance and assurance models, primarily targeting Below Poverty

*Since April 2016, the operational domain of SAST has been expanded to cover both, tertiary and secondary care. The creation of this unique trust has also facilitated the active participation of eminent specialists and private service providers in the healthcare development of the state.*

**UNDP SDGs 2017 - Good Health and Well-being:** Ensure healthy lives and promote well-being for all at all ages.

**Gender Equality:** Achieve gender equality and empower all women and girls.





PANEL AT SEMINAR ON HEALTHCARE: (from L to R) Mr. Sunil Kumar, Prof. Arnab Mukherji, Dr. N Girish and Mr. Ajay Seth.

Line (BPL) populations. The government's focus has been on reducing health inequities by expanding access to social safety networks and promoting affordable primary, secondary and tertiary care services for every household. The Karnataka State Integrated Health Policy proposes a comprehensive and innovative approach to addressing the health agenda, through an inclusive and participatory process involving all stakeholders.

### RADICAL THINKING

What does it take to ensure speedy and effective implementation of government schemes and initiatives? That is a question most government organisations have to grapple with. In 2009, Karnataka adopted a radical approach by establishing a 'special purpose vehicle' named *Suvarna Arogya Suraksha Trust* (SAST), under the Department of Health and Family Welfare, to administer the *Vajpayee Arogyashree* Health Assurance Scheme to BPL families in the state. Ever since, the objective of the trust has been to implement and monitor the health assurance schemes of the state government.

An evaluation of the *Vajpayee Arogyashree* programme have shown that it has successfully reduced out-of-pocket expenditures, financial risk and raised life expectancy in meaningful ways (Ref: <http://www.bmj.com/content/349/bmj.g5114>).

Currently, there are multiple schemes under SAST. While the *Vajpayee Arogyashree* Health Assurance Scheme continues to provide cashless tertiary care for BPL cardholders in all 30 districts of Karnataka, the *Rajiv Arogya Bhagya* offers tertiary care in case of catastrophic illness for APL (above poverty line) cardholders. *Jyothi Sanjeevini* scheme, on the other hand, seeks to provide

*Udaan, a PPP programme with Narayana Health, works towards helping meritorious students from marginalised rural families to pursue a degree in medicine. In 2016-17, 56 students were selected for this long-term programme with a nine-year tenure.*

cashless medical treatment to government staff and their dependents.

Since April 2016, the operational domain of SAST has been expanded to cover both, tertiary and secondary care. The creation of this unique trust has also facilitated the active participation of eminent specialists and private service providers in the healthcare development of the state.

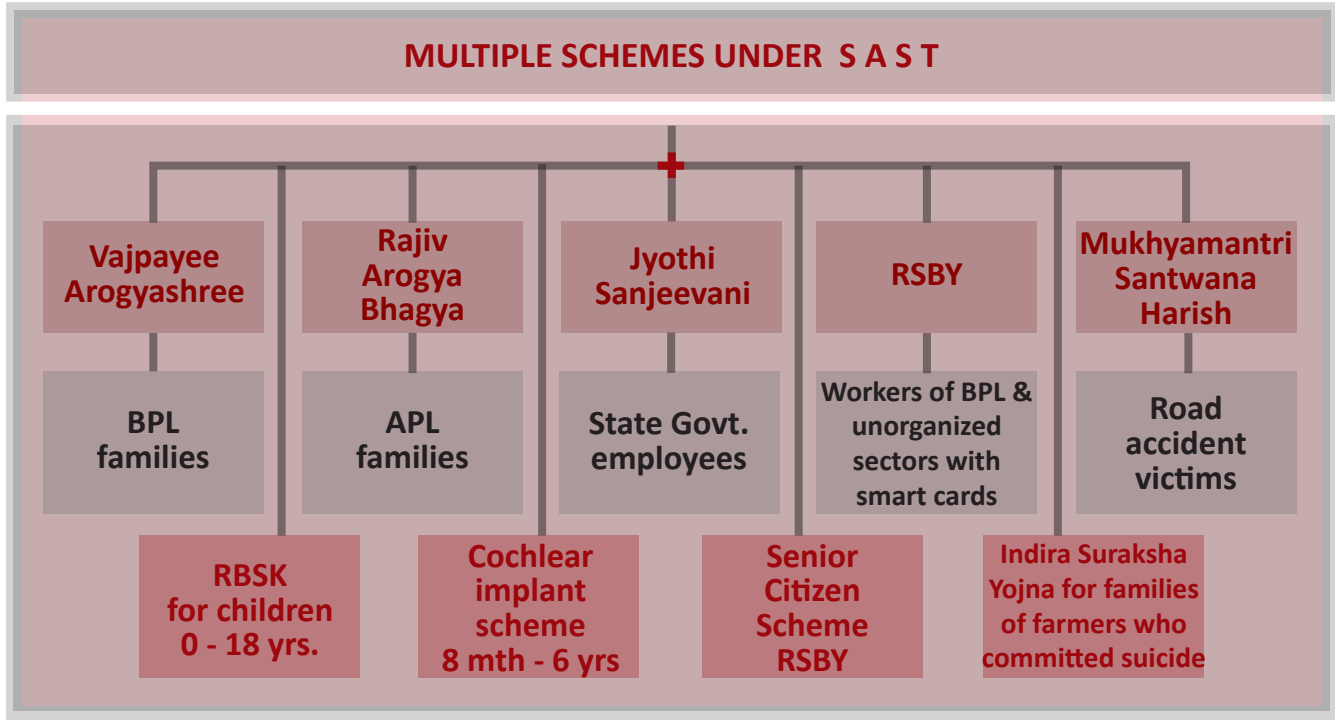
Also, the *Arogya Bhagya* schemes, launched under UHC, have played an important role in integrating the multiple health schemes in the state, thereby eliminating chances of overlap between schemes. The primary objective of Karnataka’s UHC programme is to achieve a comprehensive financing mechanism for the delivery of health services.

INCLUSIVE APPROACH

According to the Economic Survey 2017-18, recently tabled in Parliament, child and maternal malnutrition continue to be the most challenging risk factors for health loss in India in 2016. Karnataka has been proactive in its policies to ensure that the healthcare needs of women and children are catered to in an inclusive and sustainable manner.

The state has implemented a comprehensive maternal healthcare programme through five schemes, namely, *Janani Suraksha Yojana* (JSY), *Prasooti Aarika*, *Madilu*, *Thayi Bhagya* and *Thayi Bhagya Plus*. The primary objectives are to reduce maternal mortality rate (MMR) and infant mortality rate (IMR), by providing healthcare to all pregnant women and encouraging them to go for regular ante-natal check-ups, and institutional deliveries. The government has also launched several programmes – such as *Mathru Poorna* (One Full Meal flagship programme), *Ksheera Bhagya* (milk) and I (egg) - to meet the nutritional needs of pregnant women, lactating mothers and children.

In order to make healthcare truly accessible and affordable to all, it is important to involve private institutions in the endeavour. Karnataka has been persistent in its efforts to enforce the public-private-partnership (PPP) model in healthcare. Apart from encouraging private sector healthcare players to join hands with the government in addressing the public health needs, the government has also been spearheading innovative projects to tap into young talents from marginalised sections of society. For instance, *Udaan*, a PPP programme with Narayana Health, works towards helping meritorious students from marginalised rural families to pursue a degree



in medicine. The programme inspires and mentors deserving students from Karnataka. In 2016-17, 56 students were selected for this long-term programme with a nine-year tenure.

### MIND MATTERS

According to a 2017 report by WHO, 7.5 per cent of Indians suffer from mental disorders that require medical intervention. Sadly, in 90 per cent of the cases, none are availed. As much as it is about stigma and lack of awareness about mental health, the fact remains that there is a yawning treatment gap because of inadequate number of mental health experts (psychiatrists, psychologists, neurologists) in India.

The biggest challenge has been to provide accessible and sustainable mental health services. In 1992, the Karnataka government set up pioneering pilot projects under the Bellary Model, in association with the National Institute of Mental Health & Neuro Sciences (NIMHANS). This paved the way for the district mental health programme (DMHP), implemented by the government of India, under the National Mental Health Programme (NMHP). Looking at a community-based service model for the delivery of basic mental healthcare through existing primary healthcare services, the ground-breaking programme provides a sustainable and effective solution to a long-standing problem. In 2014, the Government of Karnataka launched another innovative programme, *Manochaitanya*, further integrating mental healthcare in all public healthcare institutions. Under this initiative, every Tuesday is dedicated to the care of mental health disorders at taluk hospitals, community health centres, and primary health centres in Karnataka. The services are also available

*Looking at a community-based service model for the delivery of basic mental healthcare through existing primary healthcare services, the ground-breaking district mental health programme provides a sustainable and effective solution to a long-standing problem.*

during the rest of the week at all primary health centres. In association with NIMHANS, the government of Karnataka offers a unique 'on-consultation training' programme, through innovative virtual mentoring to help bridge the gap in skilled resources and quality care in mental healthcare. Training manuals and workbooks are also made available under this model, primarily for ASHA (Accredited Social Health Activist) workers and nurses.

Additionally, the state has invested in life skill training programmes to address mental health issues. *Yuva Spandana*, a youth-driven programme for those in the age group of 15-30 years, looks at developing and implementing an integrated behavioural, mental and psychosocial support service programme through youth empowerment centres across districts of Karnataka. As of March 2016, *Yuva Spandana* had reach out to 20 districts in Karnataka.

### Comments from the Chair



**Arnab Mukherjee**

Chairperson, Centre for Public Policy, IIM Bangalore.

This seminar focussed on ways by which the Department of Health has been seeking to deliver stronger public services that span promotive, preventive and curative care. Being a cross-cutting sector, inputs from nutrition, agriculture and livelihoods have an important role to play in improving health indicators. Also, there are important innovations in the Suvarna Arogyashree Suraksha Trust as a single point of convergence of all state-level subsidies for supporting tertiary care for below poverty line and eventually above poverty line households. Further, mental health care models are also being implemented with leadership from NIMHANS to assist mainstream people. All of these have the potential to advance the agenda for better healthcare.

## NUTRITION

# Making Nutrition Accessible, Affordable

*The Global Nutrition Report 2016 places India 'off course' for all nutrition indicators. Nutrition poses a complex challenge for all states, including Karnataka. In 1975, when Integrated Child Development Services (ICDS) was launched to address the problem of malnutrition, Karnataka was an early adopter, but with limited reach. To improve its scope, the state restructured ICDS in 2011 targeting the most vulnerable communities. The state's out-of-the-box thinking, especially over the last few years, are paving the way for sustainable solutions to persistent issues, such as malnutrition, stunting, wasting and anaemia. Access to nutrition is also playing a key role in the empowerment of women. As a part of the Innovation Seminar Series, we had a detailed discussion around **Nutrition** initiatives in Karnataka in the recent past. This report talks about some practices that are underway to improve the nutrition of pregnant women, mothers and children. We also look at measures that have made nutrition affordable. Some of the ideas in this report were contributed by discussions in related sessions.*

According to the National Family Health Survey (NFHS-4) conducted in 2015-16, 60.9 per cent of Karnataka's children, below five years of age, suffer from anaemia, 36.2 per cent in this age group suffer stunted growth, while 35.2 per cent are underweight. The infant mortality rate (IMR) for Karnataka stands at 24, while the maternal mortality (MMR) rate is 132. That's the number of deaths per 100,000 live births.

The state has been actively adopting multi-sectoral strategies for improving nutrition outcomes. There's no denying that nutrition is also a gendered problem; over 70 per cent of women are affected by the lack of adequate nutrition. Inequalities also exist in the distribution of nutrition and there is a strong co-relation between wealth and the level of nutrition that is obtained. Nutrition is also sensitive to other factors like inflation

*Karnataka has been a pioneer in adopting a multi-pronged approach that not only focusses on addressing the nutritional needs of target groups, but also deals with intermediate factors that affect food intake and health status, such as motivating adoption of healthy nutrition behaviours in Indian households.*

and agriculture markets.

Karnataka is the first state in the country to propose a Comprehensive Nutrition Mission. Created on a pilot basis in two talukas in North Karnataka, the focus is on incorporating public and private sectors in an integrated

**UNDP SDGs 2017 - Zero Hunger:** End hunger, achieve food security and improved nutrition, and promote sustainable agriculture.

**Gender Equality:** Achieve gender equality and empower all women and girls.



fashion at the community level. The framework adopts a life cycle approach, wherein the target group includes adolescent girls, pregnant, lactating women, and children below three years of age, who are a critical link to the next generation. To break the intergenerational cycle of malnutrition, the nutritional requirements of these critical target groups need to be focused on.

On the other hand, the state also recognises the urgent need to address the gaps in nutrition among the urban poor. Making nutritious food accessible to all, the Karnataka government has set up Indira Canteens in the state capital with the objective of providing subsidised food to all. With a canteen set up in every ward and 132 canteens built across Bengaluru, approximately two crore meals have been supplied to the people of the city. The standardisation of these canteens in terms of hygiene, food and presentation was done in partnership with a five-star hotel. The Indira App has also been launched to help people locate and access the closest canteen.

### FOCUS ON WOMEN

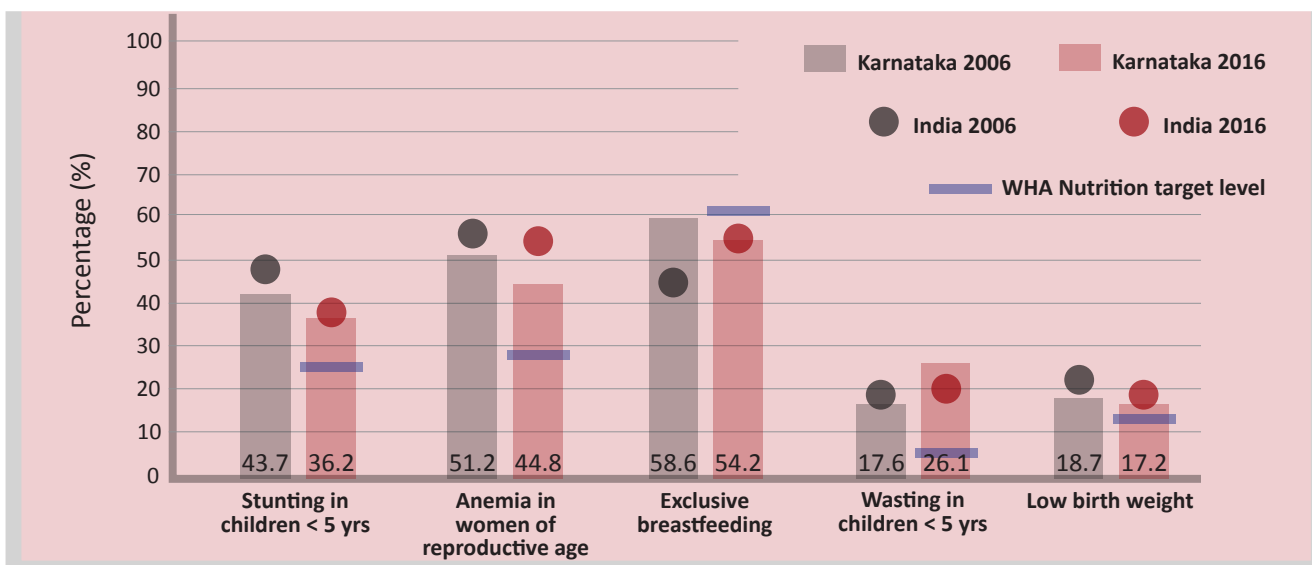
Unless states invest in women, it is not possible to end the malnutrition conundrum. Given their myriad roles as mothers, farmers and community influencers, women

*With the One Full Meal flagship programme, Karnataka aims to improve the nutritional status among pregnant and lactating mothers, as well as reduce the IMR and MMR by providing a convergence of health services.*

need to be an integral part of any sustainable nutrition solution.

In October 2017, the Karnataka government launched *Mathru Poorna*, a major innovation to meet the nutritional needs of pregnant and lactating women in rural areas. Under the programme, 12 lakh pregnant and lactating women across the state get one nutritious meal daily for 25 days in a month. This meal provides for 40-45 per cent of the daily calorie, protein and calcium requirement. It was found that the 'take home ration' given to pregnant and lactating women was often not fully consumed by them but shared with other family members. So, *Mathru Poorna* calls women to the *Anganwadis* for their meals. With the 'One Full Meal' flagship programme, Karnataka aims to improve the nutritional status among pregnant and lactating mothers, as well as reduce the IMR and MMR by providing a convergence of health services.

### TRENDS IN KEY NUTRITION OUTCOMES : 2006 - 2016



Source: Department of Women and Child Development



SEMINAR ON NUTRITION: Mr. Manoj Rajan joined the session through video conferencing. The other participant was Ms. Rupa. The session was chaired by Prof. Arnab Mukherji.

The programme also includes iron, folic acid and calcium supplementation, gestational weight gain monitoring and counselling for availing immunisation and ANC services as well as instigating behaviour change towards dietary diversity and nutritional improvement.

Apart from reducing the incidence of low birth weight and malnutrition among children, *Mathru Poorna* also aims to reduce the prevalence of anaemia in women and children, which is rampant in the state. The programme also ensures that the foetus gains adequate weight to lead a healthy life. It helps improve haemoglobin levels among mothers, who in turn form a support group for each other. *Mathru Poorna* enables rural women to create social networks that help them spread a sense of awareness, solidarity and empowerment. The programme has been implemented in 65,911 *anganwadis* across Karnataka.

### REACHING OUT TO CHILDREN

The problem of childhood wasting (low weight-for-height) is endemic in Karnataka, with all districts in the state – except Shimoga – falling under ‘very high prevalence’ category. According to NFHS-4, the

number of underweight children in Karnataka stands at 35.2 per hundred, while the figures for wasted and severe wasting are 26.2 per hundred and 10.5 per hundred respectively. For stunted growth, the number stands at 36.2 per hundred. Two noteworthy initiatives by the government to address the nutrition gap are the *Ksheera Bhagya* (Milk) Scheme and *Motte Bhagya* (Egg) Scheme.

Under *Ksheera Bhagya*, children between six months and six years of age are provided whole milk (150 ml; 200 ml in the case of underweight children) for five days a week. Milk is not only rich in high-quality protein, it is also an excellent source of vitamins and minerals, such as calcium, vitamin B12, and riboflavin. The scheme has a whole life cycle approach, as it offers livelihood to dairy farmers, especially women who look after the cattle. Studies show that egg protein given in early years can reduce stunting in children. The *Motte Bhagya* Scheme provides eggs to all children in the state twice a week; five days a week in the case of underweight children. Eggs contain all nine essential amino acids to help build antibodies and repair muscles.

Given that malnutrition is the underlying cause of at

least 50 per cent of deaths of children under 5 years, the Department of Women & Child Development in Karnataka has been proactive in addressing the concern. Apart from providing supplementary nutrition at Anganwadi centres to children in the age group of three to six years, there is also a provision for take-home ration for children aged six months to three years.

### BACK TO THE ROOTS

Millets, the traditional food-crop of Karnataka, is not only rich in nutrients, but also relatively low in cost. Sadly, in the wake of the green revolution, millets took a back seat. Over the last few years, Karnataka has been making efforts to advocate the health benefits of these wonder crops and encourage farmers to take up millets cultivation.

*There are 65,911 Anganwadis in the state which employ 1.25 lakh workers and helpers. Of these, 62,580 are main Anganwadi centres and 3,331 are mini, which combinedly cater to 56.97 lakh beneficiaries.*

The major millets comprise Ragi, Sorghum and Bajra, while the minor millets include Foxtail millet (Navane), Little millet (Saame), Barnyard millet (Oodulu), Browntop millet (Korale), Kodo millet (Araka) and Proso millet (Baragu). Rich in unsaturated fats and calcium, millets are considered to be the ideal food to deal with nutritional deficiencies, diabetes and gastric problems. Armed with minerals such as copper and iron, they help boost immunity and body strength.

The 'Special Package for Millet Production Programme' provides assistance to farmers for taking up millets cultivation - from land preparation to value addition marketing by converging ongoing schemes of the agriculture department. A Special Package Programme to promote Ragi and Jowar production has been operational since 2014-15. Agricultural inputs like seeds, seed treatment chemicals, organic manure, bio-fertilizer, micro-nutrients and need-based plant protection

chemicals are distributed at 100 per cent subsidy, at the maximum rate of Rs 3000 per ha.

Under the National Food Security Mission Coarse cereals programme, implemented in 14 districts of the state, it has been proposed to extend incentives directly to farmers for adoption of improved technologies in crops such as Ragi, Jowar, Maize, Bajra and other minor millets, in addition to rice, pulses, coarse cereals and oilseeds.

International shows and trade fairs are being held to generate business potentials for farmers. Organics and Millets, 2017- National Trade Fair (first of its kind in the country) saw participation from 194 exhibitors and 260 stalls, with an attendance of around 60,000 visitors, including 11,000 farmers.

### Comments from the Chair



**Arnab Mukherjee**

Chairperson, Centre for Public Policy, IIM Bangalore.

This seminar focussed on how population level nutritional status can be improved through government programmes and schemes. Nutrition is a complex arena with multiple challenges – poverty, access to adequate nutrients, and access to supplements during early childhood, and particularly during pregnancy and lactation. Different government departments and agencies have initiatives that complement each other in trying to reduce undernutrition in Karnataka. Schemes like Ksheera Bhagya, which ensures a glass of milk for school and anganwadi going children in classes 1 to 10, and Mathru Poorna, which provides meals to pregnant and lactating women, seek to ensure nutrition needs are met.

# Enabling An Ecosystem For Start-Ups

*In 2017, the World Economic Forum declared Bengaluru as the most dynamic city, worldwide. The key ranking criteria were rapid adoption of technology and innovation. This has been the result of consistent efforts by the state to establish an ideal ecosystem for entrepreneurship, encouraging innovation and use of new technologies. The phenomenal growth of information technology (IT), biotechnology (BT), and science & technology (S&T) in the state, particularly over the last decade, bears testament to the conducive environment that facilitates ideation and innovation through policy intervention. Over the last few years, the Government of Karnataka has not only strengthened the existing ecosystem in the capital city, but also created a similar stimulating environment in tier-2 and tier-3 cities. As a part of the Innovation Seminar Series, we held a detailed discussion on the government innovations to support the IT, BT and S&T sectors. In this report we focus on a subset of those, especially the role of the state as an enabler.*

Karnataka is home to the largest number of R&D centres, software technology parks, and industrial training institutes in India. The \$50-billion revenue from Karnataka's IT-BT sector forms a substantial part of the country's export basket. Through ground-breaking policies and strategic collaborations with academia and the IT- BT and S&T industry, the state continues to be a technology innovation hub.

## CATCHING THEM YOUNG

At an average age of 28 years, Bengaluru has the world's youngest entrepreneurs. The equivalent number for the Silicon Valley is 36 years. To ensure that the ecosystem caters to these budding entrepreneurs, the Karnataka government has implemented pioneering initiatives. In November 2015, Karnataka became the first state in

*In 2015-16, Karnataka accounted for 35 per cent of India's biotech industry revenue. If India has to achieve its ambitious goal of \$100 billion in biotech revenues by 2025, Karnataka will have to continue in the pole position.*

the country to announce a dedicated start-up policy and start-up cell that provides legal and accounting advice, mentoring, incubator options, subsidised tariffs and seed funding for entrepreneurs with innovative tech solutions.

Elevate 100, India's first comprehensive entrepreneurship platform, is a fine example of the effective collabo-

**UNDP SDGs 2017 - Industry, Innovation and Infrastructure:** Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation.

**Decent Work and Economic Growth:** Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.



rative efforts of Karnataka Biotechnology and Information Technology Services (KBITS). Similarly, Grand Challenges Karnataka is another remarkable programme, conducted in partnership with KBITS, to encourage young entrepreneurs to find innovative solutions to pressing problems in healthcare, education, women empowerment, water sanitation, and also traffic management.

To inspire the spirit of innovation at the grassroots level, the state has been investing in district incubation centres and reaching out to colleges and universities to establish new-age integration networks that are commercially viable.

In the IT space, Karnataka continues to strengthen its stronghold by investing in a series of proposed projects, such as a Hardware Park at Devanahalli, Information Technology Special Economic Zone at Mangaluru, Aryabhatta Tech Park at Hubballi and several incubators on the public-private partnership model.

### CHANGING WITH THE TIMES

The credit for making Karnataka the biotech capital of India goes to the ever-evolving, proactive government policies. Last year, the government announced the Karnataka Biotechnology Policy (2017-2022) Version 3, with a focus on tapping emerging areas of biotech, such as bio-agriculture, marine biology, rare disease management, synthetic biology, bioinformatics and bioengineering. These measures have helped create a robust ecosystem of world-class educational and research institutions, including Indian Institute of Science (IISc), Institutions of Bioinformatics and Applied Biotechnology (IBAB), Centre for Human Genetics (CHG), Institute for Agricultural Biotechnology (IABT), Bengaluru Bioinnovation Centre (BBC), and Centre for Biotechnology (CFB), to name some.

To provide biotechnology companies with a multi-disciplinary workforce, Karnataka launched India's first Biotechnology Finishing School (BTFS) in collaboration with the Department of Biotechnology (DBT). The state has also made major investments in infrastructure, such as the development of Bengaluru Biocluster and Benga-

luru Helix Biotechnology Park; biotechnology incubation centres in Mysuru and Dharwad to promote research in food technology and agriculture, respectively. Incubation centres in Mangaluru (aqua-marine research) and Bidar (animal biotechnology) are also in the pipeline.

Currently, the state houses close to 400 biotech companies - 60 per cent of biotech companies in India. In 2015-16, Karnataka accounted for 35 per cent of India's biotech industry revenue. If India has to achieve its ambitious goal of \$100 billion in biotech revenues by 2025, Karnataka will have to continue playing a prominent role.

### TAKING THE DIGITAL ROUTE

Karnataka was among the first adopters of the revolutionary E-Way Bill or electronic permits for interstate movement of goods within the country. While most states are still figuring out the logistics of replacing the all transit pass systems with the digital model, Karnataka already has the technical groundwork in place for the seamless movement of cargo across states.

In 2009, when the first shift from manual Way Bill (document issued by department for movement of goods by tax payer) to an automated system was initiated, Karnataka witnessed a marked increase in revenues as well improvement in the efficiency of the tax administration. However, until 2017, the system was state specific. With the integrated E-Way Bill, now there is a paradigm shift from policing by the department (post-movement capture model) to self-declaration by the tax payers (pre-movement capture model). The department is no longer a regulator, but a service provider that offers all services at the dealers' doorsteps.

In keeping with its vision for digital inclusion, in November 2017, the Karnataka government unveiled an ambitious project to install Wi-Fi facility in all *gram panchayats* across Karnataka. Till date, 6,000 gram panchayats have been covered by broadband, bridging the digital divide between urban and rural areas. This will increase access to services, provided there is adequate usage. Concerted efforts now need to be made to create awareness and explain the value proposition.



PANEL FOR SEMINAR ON IT-BT-S&T: (from L to R) Mr. Sathya Narayan B V, Prof. Vijay Chandru, Mr. Gaurav Gupta, Mr. Naganand Doraiswamy, Prof. Srivardhini Jha. Mr P V Bhat also participated in the discussion.

## Access To Capital, Mentors and Customers

*Start-ups are essential to drive innovation in the market. In addition to introducing new products, they have significant impact on employment and contribute to the economy.*

Start-ups, specifically in the technology sector in Karnataka, are in a very exciting early stage. The ecosystem required to sustain is developing very well and looks very promising. The state government plays a significant role in sustaining this momentum through creation of start-up friendly policies, investments in infrastructure and providing financial support that is critical. Bengaluru being the start-up capital of India and well known across the world for its leadership position

*The important aspect to note in Elevate is the speed of disbursement of funds. The entire process took just about 3 months.*

is further strengthened by state-led interventions. Every start-up goes through three important phases: pre-startup phase, start-up phase and growth phase. While the first includes activities such as idea formation, core team formation, the start-up phase includes activities like building the product, getting the first few customers. The growth phase includes activities such as expansion into other markets, geographies and revenue growth. In addition to having a start-up policy, the government has specific programmes for each of the phases. It has the start-up cell and NASSCOM 10K warehouse for those in the pre-startup phase, Elevate 100 to help start-ups in the second and funds such as Kitven for fund start-ups in the growth phase. Elevate 100 is a first of its kind programme in India. It is unique in that grants are

awarded to start-ups with no equity participation by the government. It played the role of a facilitator and ensured participation from key industry bodies. The goals of Elevate were very clear: Encourage entrepreneurship in Karnataka by providing capital, mentorship, and customer access. The criteria laid out for entrepreneurs was also unambiguous:

1. Start-ups need to be registered in Karnataka.
2. Should satisfy the definition as per the start-up policy.
3. Should be able to clearly articulate innovation.

The process followed to short list the start-ups for grants was also transparent. From over 1400 start-ups that applied, 250 were shortlisted to present to eminent jury in parallel. Each panel had at least 3 jurists and all the start-ups were evaluated on the same criteria. From this 250 that were short listed, 111 were finally chosen to receive grants. The start-ups were across multiple sectors- enterprise solutions, healthtech, agritech to name a few. The start-ups that received the grants had to clearly articulate the business goal, the product differentiators, endues of grant money and product rollout plan. The grants were awarded in tranches and the number of tranches varied depended on multiple factors. The important aspect to note in Elevate is the speed of disbursement of funds. The entire process took about 3 months, which is phenomenal.

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*In case of products where the government itself can be a customer, it has made conscious efforts to make the necessary introductions across multiple departments.*

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Two other key aspects of Elevate are mentoring and customer referrals. The government has collaborated with organizations such as TiE to provide mentoring which is very valuable to start-ups. Mentoring is provided across multiple aspects- marketing, finance, legal, sales and HR. In case of products where the government itself can be a customer, it has made conscious efforts to make the necessary introductions across multiple departments. The government is planning on Elevate being a continuous process. The second phase of Elevate that recently concluded awarded grants to 45

start-ups across agritech, gaming and animation and tourism sectors. In addition to the IT-BT departments, other departments such as agriculture and education contributed towards the grant corpus. As of today, over 2000 start-ups in Karnataka have participated in Elevate and up to Rs. 70 crore has been approved for disbursement. Out of this, more than Rs. 25 crore has been already disbursed to date.

#### **Naganand Doraiswamy**

*The author is Founder & MD, Ideaspring Capital.*

### **Comments from the Chair**



#### **Prof. Srivardhini K Jha**

Assistant Professor, NS Raghavan Centre for Engaged Learning, IIM Bangalore

The seminar gave the audience a sense of the vision of the IT-BT and S&T Department, the various policies and programmes in place and their impact. The department works closely with large MNCs in IT and BT sectors to formulate policies that make it conducive for them to perform R&D work in Karnataka. Apart from this, the department has a major focus on encouraging innovative start-ups. The goal is to create an environment that can lead to 20,000 start-ups by 2020, creating more jobs and wealth. To this end, the department has a program called Elevate which identifies and nurtures start-ups across sectors. Finally, the department also has a goal of ensuring digital inclusion by promoting availability and usage of internet connectivity at the gram panchayat level.

## URBAN DEVELOPMENT

# Focus On Mobility, Streamlined Governance

*For a decade now, debates have ranged on ways to manage the ever-growing city of Bengaluru. As the city burgeoned to become the technology capital of the country, its infrastructure and civic amenities came under severe pressure. The city continued expanding horizontally and vertically, all at the same time, to accommodate people from other parts of India and the world who came in for employment. This growing urbanization added to the challenges for the local administration. It also made land the most valued asset class. Through innovative deployment of technology, the Government of Karnataka has sought to make life better for citizens living in the city as well as those managing it by creating a connect among stakeholders. As part of the Innovative Seminar Series we discussed some of the technology-driven innovations undertaken in recent years that seek to build on past efforts and tackle some of the most pressing issues in the area of **Urban Development**. This report focuses on the two critical issues of mobility and land records.*

The Revised Master Plan 2031 (RMP 2031) released recently by the Bengaluru Development Authority, the nodal agency for the city, has identified ecological sustainability, mobility, inclusive growth and streamlined governance as the four principles for future development. This, effectively calls for a collaboration between different urban local bodies (ULBs) and municipal agencies to collaborate on common objectives. It also calls for establishing effective monitoring and review systems in cities and towns to enhance ease in administration, transparency and accountability to ensure timely and assured service delivery to citizens and stakeholders.

Karnataka has a total of 297 urban local bodies (ULBs)

which oversee systems that touch the lives of nearly 40 per cent of the state's population of 6.11 crore, as per Census 2011. This makes administration of cities and towns fragmented and non-uniform. Each ULB has its own cadre and separate operating procedures although multiple ULBs may have jurisdiction extending to the same geography. An attempt is now being made to create a unified local body cadre by merging different cadre into one consolidated structure for urban administration. This would involve changing the way staff is recruited, training in improving understanding of urban infrastructure and how it is expected to function and legislative amendments to give it sanction and authority. In this direction, there is a proposal to merge

**UNDP SDGs 2017 - Sustainable Cities and Communities:** Make cities and human settlements inclusive, safe, resilient and sustainable.

**Climate Action:** Take urgent action to combat climate change and its impacts.



the municipal and corporation Acts into a single Act binding for all ULBs. To keep defined urban areas of manageable size, the state is using a yardstick of a population of 15 lakh as against the standard definition of 10 lakh people.

*A GPS device has been installed in each bus which allows the movement of each bus to be tracked. The system sends out alerts and notifications if and when the buses go off route, or buses that are stationary, the number of stops each bus is taking and whether the buses are stopping at the designated spots.*

Alongside, City Mobility Plans (CMPs) are being prepared by the Urban Development Department in a phased manner. In the area of mobility, RMP 2031 seeks to increase the usage of public transport systems by residents of Bengaluru to 68-70 per cent from the current 48 per cent. It has also proposed two new ring roads around the three existing ones and two new routes for the metro rail. This would necessitate greater efficiency and optimal management of resources. It would also involve inter-connectivity of multi-modal transport systems

INTELLIGENT TRANSPORT SYSTEM

The Bangalore Metropolitan Transport Corporation, the only self-funded arm of the state government, has used technology innovations to create what it calls an intelligent transport system. It has spent a small fraction of its revenue to achieve this. At the core of this innovation is convenience of commuters, which in turn has led to better utilization of the existing fleet of buses. This intelligent system has several elements.

A GPS device has been installed in each bus which allows the movement of each bus to be tracked. The system sends out alerts and notifications if, and when, the buses go off route, or buses are stationary, the number of stops each bus is taking and whether the buses are stopping at the designated spots. The GPS also tracks the time of arrival at any bus stop. A Vehicle Tracking Dashboard gives other details of the service in the buses; it also gives details on the quality of driving. This data is analysed and multiple reports are generated. Each report is shared at the depot and information on individual buses is collated. Electronic ticketing machines are now available and used in all BMTC buses. There is no manual process involved in fare collection. The device also keeps sending near real-time data through GPRS.

MANAGERS OF BENGALURU

ROLE	AGENCY
Urban Town Planning	BDA & BMRDA
Water Supply	BWSSB
Road and Bridges	BDA & BBMP
Public Sanitation and Solid Waste Management	BWSSB & BBMP
Fire Services	Fire Department
Slum Improvement	KSCB, BDA & BBMP
Provision of Civic Amenities like Parks, etc.	BBMP & BDA
Registration of Births and Deaths	BBMP
Managing Public Conveniences	BBMP & BDA
Managing Power Supply	BESCOM
Running Public Transport	BMTC & BMRCL
Pollution Control	KSPCB



PANEL AT SEMINAR ON URBAN DEVELOPMENT: (from L to R) Mr. Vinay Sreenivasa, Mr. V Ravichandar, Mr. Ashwin Mahesh, Mr. Bishwajit Mishra and Prof. Arnab Mukherji. Mr. Anjum Parwez and Prof G. Raghuram (both not in pic) also participated.

BMTC has also launched a mobile app to help regular passengers as well as those who are new to the public transport system in the city. This enables them to locate their position on the map, spot the nearest bus stop, get information about routes and get an estimated time of arrival at the given source and destination. But the app needs to go through some fine-tuning because of the complexities that are involved in providing accurate information. The use of a smart card has been piloted on some routes and will soon be rolled out on other routes.

BMTC is the only transport corporation in the country with a women's safety committee. Through this committee, sensitisation sessions are conducted for drivers and conductors who are educated in what they should do in a case where a woman commuter may be sexually harassed in the bus. They are made aware of the power they have in preventing such harassment.

While BMTC's innovation in seeking to incorporate passenger feedback, track usage and respond

accordingly, fulfil some citizen needs, there needs to be an integrated approach to multi-modal public transport without which citizens might still need to depend heavily on private vehicles.

### DYNAMIC PROPERTY MAPPING

Karnataka's *Bhoomi* software was the first of its kind in the country. A land record management system, it was the first e-governance project that was successfully implemented in the state. Bhoomi's creation predated GIS technology. Today GIS technology is being deployed to dynamically map properties which will allow the information to be up to date. The technology can capture bifurcation or amalgamation of properties and will identify urban properties based on quadrants and not wards, as is the current practice. The new master plan for the city will be put on the GIS platform.

A major benefit of this is expected to be improved tax collections. Earlier, the municipalities did not have a

comprehensive property register that listed all property details (legal or otherwise). It was difficult to assess and track legal and illegal properties. Today, along with mapping of properties, the Karnataka Geospatial Data Center (KSDGC) is also mapping roads, footpaths, power lines, trees and even manholes for 56 select municipalities. This data will be used to build a geo-database for urban Karnataka. Software is also being built to allow urban local bodies and other government agencies to get access to this data. This data can then later be assessed for taxes and for public policy planning.

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*Today GIS technology is being deployed to dynamically map properties which will allow the information to be up to date. The technology can capture bifurcation or amalgamation of properties and will identify urban properties based on quadrants and not wards*

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This is likely to bear results similar to what the Bhoomi project has achieved in other parts of the state. It has been providing service to more than 7 lakh farmers over the last decade or so. But, with urbanization spreading horizontally, the Bhoomi will gain criticality. With the help of this technology, citizens have online access to the Record of Rights, Tenancy and Crops (RTC), which is an important document needed while buying an apartment or a piece of land in Karnataka. A citizen can get access and print the original RTC by mentioning the district, taluk, village, name and survey numbers. This also enables them to carry out transactions by using online payment gateways. Land record kiosks have been set up in each taluk to issue documents available in public domain. The touch screen kiosk gives easy and quick access to land records documents and status of mutation. Biometric authentication is used to ensure security of the system. Banks can also check ownership status of customers by viewing the records and loans taken against the property, if any, to avoid multiple loans by other banks.

Urban development is increasingly becoming a key arena for public discourse as more and more people move to areas that will get reclassified as urban areas. Consequently, the need for functional infrastructure and critical services will be essential. A citizen-oriented approach towards urban development and mobility appears to be a need that must be met on a war footing.

### Comments from the Chair



**Arnab Mukherjee**

Chairperson, Centre for Public Policy, IIM Bangalore.

The seminar began by focussing on how urban development is increasingly a key arena for public discourse with larger shares of the population moving to or living in areas that will get reclassified as urban areas. With high population density and need for key services and infrastructure, a citizen-oriented approach towards urban development and mobility appeared to be a common theme underlying much of the discussion. The discussion ranged from encouraging participative and proactive citizen-driven disclosure norms for filing municipal taxes to creation of citizen-oriented civic infrastructure and delivery of better services through urban local bodies. Innovation in BMTC in seeking to incorporate passenger feedback, track usage and respond accordingly, and ways of linking other emerging urban centres through integrated multi-modal transport came across as important agenda items as we look to the future.

## EDUCATION

# Focus Shifts To Learning Outcomes

*School dropout rates in Karnataka remain an area of concern though at 2.03 per cent, the rate at the primary level in the state in 2010-11 was less than half of the national average of 4.34 per cent. A study conducted by Sarva Shiksha Abhiyan (SSA) in 2017 showed that nearly 63 per cent of the children who dropped out were between the ages of 11 and 13, which means that most leave the education system after completing the lower primary classes. The education sector has faced budgetary constraints, with a 3.3 per cent dip during the last budget. Despite this, the state has formulated a set of innovative measures focusing on quality in public education. As a part of the Innovative Seminar Series, the discussion on **Education** took a look at innovative practices that have been adopted to improve learning outcomes and track progress of students and teachers. The objective is to provide free access to quality primary education to children.*

In order to track enrollment, attendance and learning of the children in primary schools, the state has created an integrated database called Student Achievement Tracking System (SATS). SATS integrates all the different databases under the government, including Aadhaar. Under this, each school and student get a unique ID number, which is stored in the format directed by the SSLC (Secondary School Leaving Certificate) board. SATS helps track students to assess attendance patterns, track schools on various parameters across different districts and make data available for block officials and principals for remedial measures.

### TRACKING PROGRESS

**State Achievement Survey:** This is a census-based survey that assesses the learning of 36 lakh students in language, mathematics and social sciences in grades four to nine in all government and government-aided schools. It is conducted to evaluate how much

each student has learnt. So far, 8 lakh children have been identified and provided with remedial assistance. Learning outcomes are displayed to the students in class and the subject-wise and grade-wise learning of each child is communicated to the concerned teachers. Each student gets a customized report card that communicates to them and their parents on the learning progress in simple language and visual format that crosses the boundaries of illiteracy. These are created in Kannada, Urdu and Marathi.

**Teacher Training Programme:** To enhance the quality of education in the classroom, *Guruchetna*, a customized teacher training programme, has been introduced that allows teachers to choose modules based on their interest and needs. Apart from subject-specific modules, the framework offers modules on philosophies of education and pedagogies. The aim is to offer all possible opportunities to teachers to help improve knowledge base, understanding and teaching

**UNDP SDGs 2017 - Quality Education:** Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.



quality. The government has used experts as resource persons for the successful implementation of the programme. The district administration aims at training 1,400 teachers across the state.

**Activity Based Learning:** Nali Kali is an activity-based learning model which enables students to learn according to their level rather than grade-level. It aims to make learning fun and meaningful. In this model, 30 students across grades 1, 2 and 3 learn in the same class, and are split into groups based on learning levels. Indicators are made at two separate levels - at the binary level, evaluations are made with the help of a regular person who has basic knowledge about *Nali Kali* and made available at all schools. The second indicator is a more detailed one, which mandates the participation of an expert with extensive knowledge of *Nali Kali*. There is a separate *Nali Kali* cell established in SSA to help carry out these evaluations.

#### INCLUSIVE CLASSROOM

SSA conducts activities in the Department of Education that encourages the participation of girls and children from disadvantaged communities. They have been conducting context-specific activities to address the problem of exclusion of girls, children of SC/ST, children of urban poor and other children. The wide range of need-based and local specific innovations for marginalized communities and disadvantaged groups include:

- Awareness camps for adolescent girls
- Meena programme
- Chinnara Agri Darshan
- Chinnara Zilla Darshan
- Adventure and Nature Study Camp
- Early childhood care and education

#### MAKING SCHOOLS SAFE

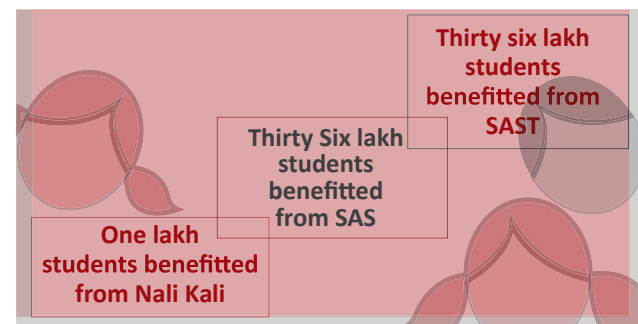
Karnataka is the first state in the country to come up with a comprehensive policy to ensure safety and protection of children in schools. The Child Protection Policy (CPP) is a guiding document for all educational institutions that are responsible for the safety of children. Based on guidelines issued by UNICEF and NIMHANS, Bengaluru, the CPP was developed through extensive consultations with children, educationists, civil society,

NGOs, school management and teachers from various backgrounds. *You can read more on the subject in the chapter on Social Justice and Empowerment.*

#### HARNESSING EXCELLENCE

**Bangalore Ambedkar School of Economics** is an autonomous body under Bangalore University that is in its first year of operation. It is patterned on the London School of Economics and seeks to help students excel in the subject. As a measure of inclusivity, 30 per cent of its seats are reserved for SC/ST and OBC students. Bachelor of Science and Master of Science programmes in economics are offered to students who also study B.R. Ambedkar's views on economics of discrimination, caste, monetary economics and federal finances.

#### CHILDREN BENEFICIARIES



Another initiative launched by the state government is the **Social Science Talent Search**. Under this, the Bangalore University conducts an examination for students who are in the 12th standard. Post evaluation, top 25 students are given the option to enroll under the scholarship programme. Each student is offered a scholarship of Rs. 500 and Rs. 2000 book grant at the end of the year. Workshops are conducted for them at the Institute for Social and Economic Change. Seven batches have already been trained under this scheme.

*This year, a census-based assessment test was conducted for 36 lakh children to assess learning outcomes and the results were processed in 25 days. This was the largest of its kind in the country.*



PANEL AT SEMINAR ON EDUCATION: (from L to R) Ms. Narmada Ananda, Ms. Kavita Ratna, Ms. Vidya Natampally (behind Kavita), Prof. R.S. Deshpande, Mr. Ankit, Prof. Gopal Naik, Prof. Arnab Mukherji and Dr. Jyotsna Jha.

## “Our Aim Is To Ensure Quality”

*To get a better understanding of the innovative practices that have been implemented at the primary school level, we spoke with **Dr Jaffer**, State Project Director, Sarva Shiksha Abhiyan, and Rashtriya Madhyamik Shiksha Abhiyan. There is a drop in the enrollment rate in schools despite the incentives that are provided, he says. Excerpts from the detailed interview below:*

### Are children dropping out of school or shifting to private education?

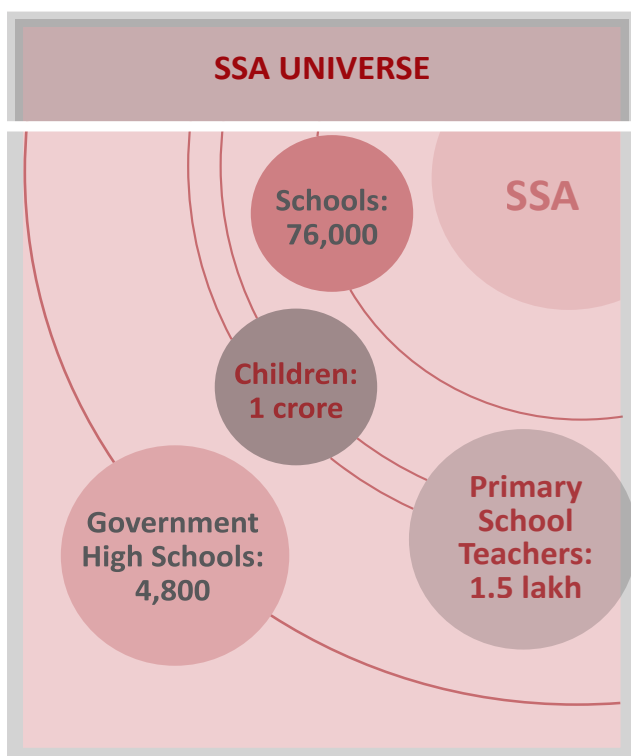
Most of them are shifting from public education to private education. The immediate conclusion that we can draw is that, public education is not catering to the needs of the populace. There may be an issue in the quality of education or the medium of education. We are losing 1.5 lakh children every year. We have to think of managing the sector more efficiently. We need to bring about innovations in quality and in management. In the last decade several innovations have been put in place with the aim of improving academic quality. Innovations in management, including HR and system improvement

*According to data published by Sarva Shiksha Abhiyan, the mid-day meal scheme has helped check the number of school drop-outs to 90,000 in 2016 from 7,00,000 in 2001.*

was not looked at. Ideally, we should have improved the quality of public education to compete with private education. Instead we set up entry level barriers for private players. We are now beginning to see this in a more systematic way through efforts like Nali Kali. We have also put in place SOPs to make mid-day meals

safe for consumption. The third quality assurance initiative is to see whether the children's learning outcomes have improved.

Though there is no clear consensus on the best form of assessment, we decided to bring about a more systematic assessment in the present set up. The CCE results of children, who are studying in government schools was captured and assessed through a sample-based assessment. Census-based assessment is carried out, not for the teacher, not to grade the school, not to fail the child, but to identify the weak children who require assessment. Last year we did a public examination for classes 4 and 6.



#### Does the state board hold the exam?

Yes. It is not a board exam that one must pass, but an assessment to provide remedial help. The purpose of this test is self-assessment of the student. This year we assessed 36 lakh children on two papers. Around 72 lakh customized OMR sheets were pre-printed with QR codes. We had 890 different versions of question papers, which were scanned and processed in 25 days. This is probably the largest kind of census done in the country.

#### Can this model be replicated nationally?

It can be replicated as this is the first time that an assessment of this scale has been carried out anywhere in India.

#### Are students interested in remedial classes?

These are free of cost and there's a huge demand for English language. The participation is encouraging.

#### There is a gap in education and the skills needed for the job market. Is any work happening from the primary level itself?

Education is a slow-moving change. A direct answer to your question is, yes, we are doing whatever we can, but are the children coming out of this system sufficiently skilled? No. But maybe after five to six years we can expect better results. Our focus, right now, is on improving the quality of education at the primary level.

### Comments from the Chair



**Prof. Gopal Naik**

Dean (Faculty), IIM Bangalore.

The seminar and interviews focussed on how the quality of school education is being influenced through innovative ways in tracking student performance, learning outcomes and teacher performance over time. Further, child safety protocols have been developed to ensure that boys and girls are safe in our schooling environment. IT-based approaches to student tracking and student performance provide important ways in identifying who needs remedial action. As the learning content in school stabilizes, these initiatives provide a healthy learning environment where students' achievements are likely to improve.

## SKILL DEVELOPMENT

# Skilling To Match Industry Needs

*In a recent report, The National Skill Development Corporation (NSDC) has projected the incremental human resources requirement in the electronic and IT hardware sector at 89 lakhs by 2022. These would be spread over different segments like manufacturing, sales and marketing, retail, repair and maintenance, etc., requiring varied skill-sets. It has also predicted a mismatch between demand and supply of skilled and highly skilled workers. Bengaluru, which has been rated by UNDP as one of the four leading technology hubs in the world, is expected to face the brunt of this shortfall. The Government of Karnataka's Skill Policy 2017-30, is looking to create a robust, multi-tier and efficient system to meet the growing demand.*

*As part of the Innovative Seminar Series, we held a discussion on the innovations in **Skill Development** in Karnataka in the recent past. In this report we focus on innovations that have worked towards bridging the gap between skill development and employability.*

Out of a population of 6.11 crore, Karnataka has 2.44 crore registered workers, 55% of whom are between the ages of 20 to 59. Majority of these workers are engaged in sectors like information technology, biotechnology, manufacturing and mining. About half the state's population depends on agriculture for a living. Two-thirds of the state's GSDP comes from the services sector, while manufacturing contributes around 20 per cent-plus, and agriculture a little above 10 per cent.

The state has a network of 1,700 public and private Industrial Training Institutes (ITIs), of which 15 per cent is aided by the government. Against a capacity to train 1,06,000 youth, the intake is only 68.9 per cent. The state also hosts 290 polytechnics that can accommodate

75,000 students, but the enrollment rate is only 80 per cent. This gap between intake capacity and actual enrollment is not as wide in general, non-technical courses at the graduation level, but exists noticeably in technical degrees like BE/B.Tech/B.Architecture, para-medical and health-related courses.

Much ahead of the national policy, Karnataka had already formulated the State Policy on Skill Development in 2008. However, the impact of the policy was limited due to excessive dependence on Karnataka Vocational and Skill Development Corporation (KVTDC). The Department of Skill Development, Entrepreneurship and Livelihood was set up in 2016, and provides short-term training to youth and facilitates job opportunities

**UNDP SDGs 2017 - Gender Equality:** Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.

**Quality Education:** Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.



### MEETING TRAINING NEEDS

Skill development as a subject requires active involvement of different stakeholders, including government departments that fund a majority of the training programmes, industry partners, civil society, training institutions, academic and research institutions, and donor agencies. It is important to identify training providers, standardize curriculum, and institutionalize functional capacity development.

To meet the burgeoning demands across sectors, the Government of India has launched a skill development programme called Skill India to improve employability of young aspirants. In its own variant, Karnataka has set up, under the department of skill development and entrepreneurship, skill sector councils to formulate the curriculum and assessment of training. Around 40 such skill sector councils, a total 1,960 job roles and 18,000 trainers have been identified across the state. There is less participation of the marginalized groups - women, persons with disability, minorities, SC and ST - in skill

development programmes. The total number of people targeted for the skill and livelihood programmes between 2018 to 2030 is 188 lakhs.

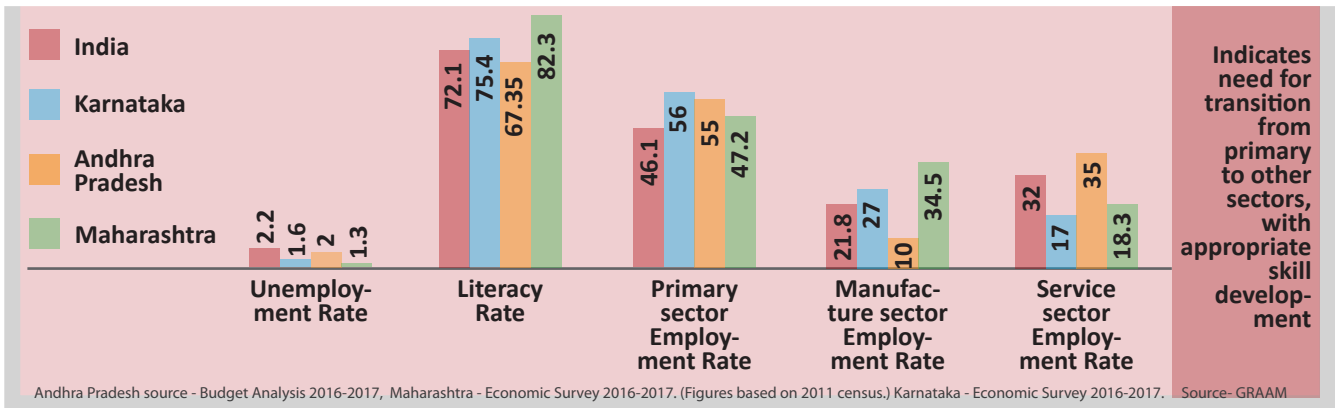
The launch of *Kaushalya* Karnataka Yojane is expected to augment the skill-training scenario in the state. Kaushalkar.com, a web portal and app, was launched in 2017 with the objective of training 5 lakh Kannadiga youth. It is envisaged as a single window for employment, entrepreneurship and livelihood. It aims to provide online service and support for the entire skill life cycle, as well as information for those seeking overseas employment. Karnataka is the first and only state to provide pre-counseling to its youth through telephone or face-to-face interactions, to identify trainee capabilities, and helps them seek appropriate skill training, recommends apprenticeship or connect to potential employers.

There is also a high need to strengthen employment exchanges at the district level, facilitating skill development, employment and entrepreneurship, a need to look at ancillary support sectors like furniture and furnishing, handicrafts, carpentry, handloom, plumbing, sanitary work, basic electronics, beauty treatment, etc. Most of the people employed in these sectors form the unorganized workforce and need to be brought under the ambit of skill development schemes.

Six state-of-the-art development-training facilities have been made available with international collaboration for advanced vocational training. These are strategically positioned to support local initiatives, autonomous

*Karnataka is the first and only state to provide pre-counseling to its youth through telephone or face-to-face interactions, to identify trainee capabilities, and helps them seek appropriate skill training, recommends apprenticeship or connect to potential employers.*

### COMPARATIVE STATEMENT FOR NEIGHBOURING STATES OF KARNATAKA (%)





PANEL AT SEMINAR ON SKILL DEVELOPMENT: (from L to R) Prof. Arnab Mukherji, Ms. Maulishree, Mr. Ashraful Hasan, Mr. Basavaraju R, Prof. S Nayana Tara and Mr. L. Krishnan.

*Efforts are on to adapt the German dual system into the ITI system to facilitate trainees to spend more time in the industry. This scheme aims at incentivizing industry association to play the role of an aggregator and facilitator.*

administrative structures, skill upgradation centers for faculties, future ready technical courses and to provide skill-upgradation training to those who are already highly skilled.

#### TOWARDS EMPLOYABILITY

*Pancha Sutra* looks at how skill development can be carried out to maximize employability in the state. The aim of the programme is to strengthen the formal vocational training system with an industry-oriented, future-ready and vibrant curriculum. It follows universalized career guidance and placement services and aims to revitalize

school education curriculum to make the students employable.

A skill training scheme named *Yuva Yuga* has been launched in Karnataka with the aim of creating about 10 lakh skilled jobs by providing new-age technology skill training in IT, electronics, animation and other sectors by pooling funds from governmental grants, entrepreneurs and other training programmes.

The objective of this scheme is to encourage and promote skill development for locals as well as non-Kannadiga youth by aligning skilling efforts of the industry and all existing skilling schemes of GOI/GOK to create an industry ready workforce in IT, ITeS, ESDM, Telecom and AVGC (visual effects and gaming) sectors. The scheme aims at enabling and mobilizing a large number of youth to take up industry-designed quality skill training and in the process become productive and employable. It aims at encouraging standardization of the certification process and puts in place the foundation for creating a registry of skills.

**Imparting skill development in a PPP model:** There is an initiative to start technical training institutions with the use of private infrastructure, which underlines the attempt to forge links with the industry and maximize industry participation in capacity building. The structure of the course will be designed to make students spend more time in the industries and in the process, utilize existing training infrastructure to learn the ways of the industry.

Integration of apprenticeship training into regular curricula and certificate courses are being initiated through an action plan. Efforts are on to adapt the German dual system into the ITI system to facilitate trainees to spend more time in the industry. This scheme aims at incentivizing industry association to play the role of an aggregator and facilitator.

*The Yuva Yuga scheme seeks to align skilling efforts of industry and all existing national and state level skilling schemes to create an industry ready workforce in IT, ITeS, ESDM, Telecom and AVGC sectors.*

Concurrently, a state-wide network of Entrepreneurship Hubs (e-Hubs) is being set up as a support mechanism for budding entrepreneurs. They will be provided access to institutional finance to ensure timely availability of credit through co-ordination between entrepreneurs, banks and other financial institutions.

### STRATEGIC INTERVENTION

Information, education and communication are being made accessible, along with modules and tools in Kannada, keeping special focus segments, like persons with disabilities in mind. The programmes are communicated to the beneficiaries through information centres in village panchayats equipped with ICT tools, and social media platforms, to enroll the youth directly for the training programme. Skill development and employment kiosks are being set up to provide information on skills and linkages for training/employment on a bi-

monthly basis. Short-term basic and multipurpose skill programmes are also being offered at village/cluster level in co-ordination with local skill agencies and *gram panchayats*.

An attempt is also being made to introduce life (soft) skills, language enhancement (communication) skills, lifelong learning, business accounting skills and computer skills at the school level. Basic skills such as sustainable agriculture, basic electrical, mechanical and computer skills are to be imparted from the higher primary (class 6) level, and vocational education will be offered as an optional paper in classes 8 and 9. B.Ed for vocational training is being launched for developing a skilled teacher force in Karnataka and a basket of related courses have been identified to provide choices, and to address the employability issues amongst students pursuing non-technical education.

### Comments from the Chair



**Prof. S Nayana Tara**  
Advisor, IIM Bangalore

The session on skill development was an interesting one in which discussions centred on innovations from the governmental perspective. The overall objective appears to be to encourage and promote skill development of youth by aligning skilling efforts of the industry and all existing schemes of GOI / GOK to create an industry-ready workforce. The Yuva Yuga programme addresses gainful employment with a focus on ten sectors. The key innovation is the ekaushal website which takes in the parameters fed by potential candidates to advise on courses they could take up. Alongside, the kaushalkar portal is envisaged as a single window for employment, entrepreneurship and livelihood and seeks to train 5 lakh youth. The attempt is to provide online services and support for the entire skill life cycle.

## LAW & JUSTICE

# Keeping Citizens At The Centre

*Innovations in the justice system is possible only when change is managed well. This is as relevant to the process of law making as it is to the courts which dispense justice. In Karnataka, the effort on both counts, in the recent past, has been citizen-centric. The state has formulated rights-based rules and policies that seek to empower women, children and other marginalized citizens. It has also sought to intervene in areas where it deemed its role as critical, like the proposed law to protect patients or the ban on child marriages. In this report we look at innovations in court working and how that change was managed. We also look at some of the landmark laws that were passed in the state. The report is based on discussion on **Law and Justice** as part of the Innovation Seminar Series.*

In Karnataka, forwarding-looking legislation has gone hand-in-hand with innovations to build greater efficiency in the justice dispensing system. However, to bring about change in the justice system it was necessary for the judiciary to accept technology, which, in itself, required a sophisticated management of change. To overcome the initial resistance, training processes were used for familiarization. Once the innovations were accepted and implemented, it brought about a holistic change in how courts functioned. Judges now dictate judgments into their laptops, obviating the need for cumbersome paperwork and consequent delays.

The National Judicial Data Grid (NJDG) has been created to keep track of what is happening in each court at any point in time. It is a dynamic process and through this, judgments are uploaded every minute. As of 2016, 4.2 million judgments have been digitally recorded in Karnataka.

*In the state academy, judges are now trained in the new system with the help of computers. Around 2000 judges have been trained so far.*

Innovative use of tracking court cases, bringing in technology to manage cases during its lifecycle, and having professional court managers have reduced wait times and increased case disposal rates. The High Court Litigation Management System (HLMS) enables judges to get instant notification of the court's proceedings. The system also gives judges access to libraries and GPS for location purposes. Judgement Service Centres or information kiosks have been set up to facilitate smooth communication between the high court and the lower courts.

**UNDP SDGs 2017 - Peace and Justice, Strong Institutions:** Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.

**Gender Equality:** Achieve gender equality and empower all women and girls.



For details of new laws, read *Legislating for welfare and social justice*

### LENDING EFFICIENCY TO POLICING

Technological innovations have also been used for better delivery of policing service. The objective has been to identify when, where and what kind of needs arise in the city and targeted resolution of the episodes. The '100' emergency helpline has been made more effective with the use of IVRS which tracks all calls and directs them to either the 'police helpline', the 'traffic helpline' or the 'others helpline', depending on the nature of the call. Thereafter, the system automatically selects the nearest

jurisdictional police station, the dispatcher receives the call for service (CFS) and flags the complaint to the nearest Hoysala. The dispatcher receives information on the action taken by the Hoysala in the form of texts, images or audiovisual files. The complaint is then updated in the system and is submitted for closure. Feedback from the citizen-complainant is also taken on record.

There are 272 Hoysalas, including 106 pink ones for women's safety. Citizens can avail of better police services using the Suraksha app. The entire process, from the SOS to resolution is tracked and monitored and is closed only after the citizen gives his/her feedback.

## Legislating For Welfare And Social Justice

*This article looks at some of the key legislative attempts by the Government of Karnataka to ensure welfare and social justice. While the intentions were honourable, not all of it was taken to a logical end.*

**Street Vendors Protection of Livelihoods and Regulation of Vending Act, 2014:** UPA-II passed this historic Act in 2014, acknowledging for the first time, the rights of Indians to vend on city streets. The rules for this central Act are to be framed at the state level for which Karnataka set up a committee which included street vendor unions, advocates, officials of local bodies from different parts of the state. Karnataka was the first state to form such a committee. The state also provided a translation of the Act in Kannada, enabling vendors to understand the law. The committee met several times enabling wider discussions. However, the committee's suggestion for sittings across the state, which could have created greater awareness, was ignored. The finalized draft rules were issued, initially only in English, and later in Kannada (under some pressure). At present, the objections to and comments on the draft are before the government. By following a process which included those for whom the law is meant and providing Kannada versions of legislative documents, the state has ensured that the draft largely follows the spirit of the Act.

**Karnataka Private Medical Establishments Act (Amendment) 2016:** While the KPME Act was in place since 2007 it was ineffective in regulating private healthcare. The government, therefore, moved amendments. Again, a committee was set up under Justice (Retd) Vikramjit Sen to suggest amendments to strengthen regulation of private hospitals and make the Act patient-centric. The intent was spelt out by health minister Ramesh Kumar who stated that patients were an unorganised lot and, therefore, it was the state's duty to protect their rights.

*The street vendors unions have demanded that the grievance redressal committee should have the powers of a Civil Court, something that will ensure that its purpose is served. If accepted, this will be a welcome step and Karnataka will be among the first movers.*



PANEL FOR SEMINAR ON LAW AND JUSTICE: (from L to R) Prof. Nigam Negguhalli, Mr. Surya Prakash B S, Justice (Retd) Ram Mohan Reddy, Prof. Arnab Mukherji and Mr. Vinay Sreenivasa. Mr Praveen Sood also participated in the discussion.

However, the bill ran into several problems, with its genesis being in the composition of the committee. The majority members represented interests of private healthcare players with just two representing the rights of patients. While citizen groups demanded a cap on charges, an independent regulator, a patient rights charter and an independent implementing mechanism, the final amendment only spoke of the patient rights charter and a cap on charges only for BPL patients and a weak regulatory mechanism.

Even these weak provisions were challenged. Though the Act was meant to regulate medical establishments, doctors were made to believe that it was meant to penalize them. Similarly, although the charges would be fixed after consulting private hospitals, it was perceived to be an arbitrary intervention. All this could have been avoided if the government had communicated better. The bill was finally passed in a diluted form. However, for the first time, the rights of patients have been recognised.

**Karnataka State Transgender Policy, 2017:** This policy aims to safeguard the fundamental rights of transgender persons through various socio-economic interventions.

While the policy is a step forward, there are aspects which need to be corrected. While incorporating significant elements of the landmark judgment of the Supreme Court in *NALSA vs. Union of India* (2014), the policy fails to formalise the spirit of the law on transgender rights. It uses the term “transgender” instead of “third gender” which would also cover communities like female to male and male to female trans persons, jogappas, hijras, intersex persons, etc. Though a welcome change, this definition fails to recognise the unique needs of transgender and intersex persons.

The policy seeks to enforce the constitutional guarantees of dignity, non-discrimination, equal access and redressal mechanisms for transgender persons. Proper social, legal and institutional protection, educational and health facilities, basic amenities such as water supply, sanitation, housing and employment are also guaranteed in the policy. It is, however, silent on the rights of transgender persons to marry, adopt children and inherit property.

A Transgender Cell is to be established to oversee implementation. The policy claims to support self-

identification of gender identity, mandates the issue of transgender identity cards after scrutiny by the cell and psychiatric evaluation of the applicant. This procedure is in direct contravention of the NALSA judgment.

The policy further aims to create positive awareness about the community in society at large, reaching out to family members through anganwadi workers to sensitize them about trans-children, revision of syllabus to facilitate gender diversity, scholarship for trans-children, gender neutral uniform and common toilets as well as free sex assignment surgery for trans-individuals.

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*The amended child marriage Act in Karnataka is the only one of its kind in India and has recently been lauded by the Supreme Court for resolving the conflict between laws on child sexual abuse & marriage.*

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Among others, the policy seeks to amend Sec 375 of the IPC, Juvenile Justice Act etc. to make these laws gender neutral in respect of the victim, address stigma, discrimination and violence, provide schemes for housing, education, BPL ration, among others. The policy also commits to building much needed public opinion to strike down Section 377 of the IPC. It will be rolled out in a phased manner and aims to ensure compliance at all levels within 5 years.

**Prohibition of Child Marriage:** Karnataka has recently amended the Prohibition of Child Marriage Act (PCMA) 2006 and made child marriages void ab initio. PCMA prohibits marriages between a girl below 18 years of age and a boy below 21 years of age. Such marriages can be declared void on the application of either party. However, realistically, children, especially girls, are rarely able to exercise the agency necessary to apply for a declaration of nullity.

The amendments to the Act were based on the recommendations of the Justice Shivraj Patil Committee which looked into incidence of child marriage. The amended Act prescribes a minimum of one year's jail

term for offenders. This amendment is the only one of its kind in India and has recently been lauded by the Supreme Court for resolving the conflict between laws on child sexual abuse and laws on child marriage. In light of the Supreme Court's recent judgment striking down the marital rape exception for children below 18 years of age, this amendment acquires greater significance as a step towards rationalising laws on sexual violence, child sexual abuse and child marriage. The state government has been adopting a consultative approach before bringing in people-friendly legislations. However, it needs to have a wider base, which would increase public acceptance. The government needs to clearly state its legislative intent and make available material in local languages so that people can make an informed choice.

**Vinay K Sreenivasa with Darshana Mitra, Deeptha Rao and Bindu Doddahatti**

*The authors are advocates with the Alternative Law Forum.*

## Comments from the Chair



**Arnab Mukherjee**

Chairperson, Centre for Public Policy, IIM Bangalore.

This seminar gave a rare opportunity to look at the way the Law and Justice Department has attempted to improve service delivery by exploiting technology to change the actual effectiveness and touch points that citizens experience. Innovative use of tracking court cases, bringing in technology into managing cases during its lifecycle, and having professional court managers have reduced wait times and increased case disposal rates. Similarly, using technology to monitor, orient, and deliver better policing services in the city of Bengaluru sets standards that allow the services to understand when, where and what kinds of needs arise in the city and to plan around that. Finally, the seminar also noted the public spirit of crafting legislation that has set in public domain policies and legislation that affect disempowered groups.

## SOCIAL JUSTICE AND EMPOWERMENT

# Mainstreaming The Marginalised

*As a theme, social justice and empowerment is the ultimate point of convergence of multi-sectoral efforts. It is as much about protecting the rights of vulnerable communities as it is about mainstreaming the marginalized. On both counts, Karnataka has been a trail blazer of sorts. Through a combination rights-based programmes, legislative changes and welfare measures, Karnataka appears uniquely poised to build an inclusive society. Programmes like Mathru Poorna, Manaswini and the Child Protection Policy have been successful in creating impact on the ground. The state has been lauded for its policy on transgenders and banning child marriages. As part of the Innovation Seminar Series, we discussed in detail some of the innovations that have enabled **Social Justice** and **Empowerment** of different communities in the recent past. This report focuses on a sub-set of those efforts. Some of the ideas in this report have been curated from other related discussions.*

### RIGHTS FOR THE MARGINALISED

Compared to neighbouring Kerala, Maharashtra and Telangana, the social acceptance and quality of life of the transgender community in Karnataka has already moved to the next level. Prior to the formulation of the transgender policy of 2017 the state had already implemented several schemes related to social security, health, medical benefits and access to loan specifically for the community. The 2017 policy seeks to guarantee dignity, non-discrimination, equal access and redressal mechanisms. It offers legal and institutional protection and also guarantees employment. Changes have also been made in the RTO rules to make it easier for transgenders to get driving licenses. Most of all, the policy commits to building much needed public opinion

to strike down Section 377 of the IPC.

Much before the landmark Persons with Disability (PWD) Act was enacted in 1995, Karnataka had established a separate directorate to deal with disability. Against the PWD Act mandate of 3 per cent reservation in government jobs, the state reserves 3 per cent for group

*By following a process which included those for whom the law is meant and providing Kannada versions of legislative documents, the state has ensured that the draft rules for street vendor rights largely follows the spirit of the Act.*

**UNDP SDGs 2017 - Gender Equality:** Achieve gender equality and empower all women and girls.

**Peace and Justice, Strong Institutions:** Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.

**Quality Education:** Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.



A and B cadre and 5 per cent for those in group C and D.

Maternity allowance of Rs. 2000 per month is provided to mothers who are blind or visually impaired, for the first two years after the child is born which allows them to engage caregivers for their babies. Karnataka won the national awards in 2016-17 for the best state in the empowerment of persons with disabilities and for the protection of parents and senior citizens.

Karnataka was also the first state to form a committee to draft rules for implementing the Street Vendors Protection of Livelihood and Regulation of Vending Act 2014. In an innovative and unique move, the state provided a translation of the Act in Kannada, enabling vendors to understand the law. Members of vendors unions were also included in the committee. By following a process which included those for whom the law is meant and providing Kannada versions of legislative documents, the state has ensured that the draft largely follows the spirit of the Act.

### EMPOWERING WOMEN AND CHILDREN

Empowering women has been a long-standing national agenda. The state has attempted to do its bit through schemes like *Mathru Poorna* and *Manaswini*, which are geared to tackle malnutrition among women and provide them some financial security. Under *Mathru Poorna*, pregnant and lactating women are provided one fully balanced meal with macro and micro nutrients for a duration of 15 months. This meal provides for 40-

*The Transgender policy seeks to guarantee dignity, non-discrimination, equal access and redressal mechanisms. It offers legal and institutional protection and also guarantees employment.*

45 per cent of the daily calorie, protein and calcium requirement.

The state has also launched *Manaswani*, a scheme that is designed to provide some financial sustenance for women who face social ostracization and cannot participate in community decision-making. Under the scheme, unmarried, divorced or widowed women above 40 years of age receive a monthly pension of Rs. 500. This support seamlessly merges with old age pension once the women cross 64 years of age.

Karnataka has a track record of implementing the ICDS programme on a large scale. Out of the 204 ICDS programmes in the state, 181 are in rural areas, 12 are in tribal areas and 11 are in urban areas. The programmes are implemented through around 66,000 anganwadi centres and about 1.2 lakh workers and helpers.

More significantly, the past couple of years have been significant in children's rights related policy formulations in Karnataka. The Child Protection Policy has been put in place to safeguard children in learning environments and elsewhere. For more on this read: Recognising the rights of children

## Recognising The Rights Of Children

*The past couple of years have been significant in children's rights related policy formulations in Karnataka. While taking a closer look at some of these policy developments, it is important to view them holistically as a part of the big-picture keeping in mind the larger canvas of children and their realities. Special attention needs to be paid to what bearing these have on children who are among the most vulnerable - socially, economically, geographically and politically.*

The State Child Protection Policy and the Karnataka State Child Protection Policy and Guidelines for Educational Institutions, which were both accepted and notified for implementation in 2016, are first of their kind for India.

These have already been influencing similar processes in other states. The policy guidelines for educational institutions comes under this all-encompassing state policy. The trigger for drafting this policy was a spate of



PANEL AT SEMINAR ON SOCIAL JUSTICE AND EMPOWERMENT: Ms. Uma Mahadevan (on the left) and Ms. Akkai Padmashali. The session was chaired by Prof. Arnab Mukherji.

child sexual abuses at school. It was preceded by knee jerk reactions by several departments in the backdrop of severe admonitions by the High Court of Karnataka. The process started with a need to formulate guidelines to address child sexual abuse. However, following detailed meetings during which the government was receptive to feedback, the state acknowledged that what was required was an overarching child protection policy, which would subsequently provide the framework for all further legislations related to children.

The policy is guided by certain non-negotiable fundamental principles which form the base of all laws. They are:

- Principle of Best Interest of the Child
- Principle of Equality
- Universality and Non-discrimination
- Principle of Right to Survival and Development
- Principle of Right to Participation
- Principle of Dignity and Self-worth
- Principle of Confidentiality

The policy and guidelines are aligned with child-centric principles and see children as 'subjects of rights' and not 'objects of protection'. They uphold the principle of

indivisibility of rights of children and highlight the state's accountability to its children. They place emphasis on agency of children and includes clearly laid path of escalation that allows children to themselves register complaints.

Both these were developed through extensive consultative processes with over 1000 children representing different experiences and aspirations and 5000 adults from different walks of life and geographies. At present, several challenges related to ensuring speedy implementation remain. Some of them are enumerated below:

- Capacity building not only for children and faculty of the educational institutions, but also for members of the government departments and elected members of the local governments who have a significant role to play in preventing child abuse
- Mechanisms for applying these guidelines in private educational institutions
- Processes to ensure all state systems respond to children in crises and function optimally
- Establishing complaints mechanisms which include clearly delineated paths of escalation and actions against non-compliance. A training module for master trainers

has been developed to reach all government schools, but the actual training programme is yet to commence.

The state is also developing protection guidelines for children in Anganwadi centres and children in residential care. The challenges include ensuring convergence among the multiple agencies involved in providing such care. Several of the state players do not have children and young persons as their core constituency and lack even the basic competencies required to work with and care for children. There are also numerous private players offering child care and residential care facilities – at present largely outside any form of monitoring. The guidelines will have to address these challenges first on paper. Their implementation will certainly prove to be a herculean task.

*The State Child Protection Policy and the Karnataka State Child Protection Policy and Guidelines for Educational Institutions, which were both accepted and notified for implementation in 2016, are first of their kind for India. These have already been influencing similar processes in other states.*

The Gram Swaraj Act of 2016 upholds children's citizenship, like never before. It highlights the roles and responsibilities of the Gram Panchayats to uphold the rights of children, to involve children in its bottom-up planning processes, in ensuring their concerns are given a high priority matched with budgetary allocations. It makes it mandatory that children's councils are held periodically during which children present their issues directly to the local government for response and the government has to report back to the children on the action taken. This Act has implications only for children and communities in rural Karnataka, without any parallel in urban governance at present. This Act, too, needs strong political will to see successful implementation. A special mention requires to be made about the exclusive policy to ensure 'Right to Education for Migrant Children and Children of Migrant Labourers'. Its

genesis is traced back to the state High Court directive in response to a public interest litigation which pointed out the state's abysmal response to the education needs of children who are subject to distress migration. The draft of this policy awaits acceptance.

The cumulative impact of these policies, some of which have taken very long to process, have succeeded to varying degrees in propelling the state's accountability to children.

#### Kavita Ratna

*The author is Director Advocacy, The Concerned for Working Children. She was a member of the Core Drafting Committee of the State Child Protection Policy and Educational Guidelines.*

### Comments from the Chair



#### Arnab Mukherjee

Chairperson, Centre for Public Policy, IIM Bangalore.

The seminar on social justice touched on interesting ways in which important sections of society have been influenced. Empowering women has been a long-standing agenda in India. The state has attempted to improve on this by tackling malnutrition among women, providing one fully balanced meal with macro and micro nutrients for a duration of 15 months for pregnant and lactating women. Karnataka has also been engaging with the transgender community and has attempted to provide them greater dignity by approving a policy to safeguard against social, sexual and economic discrimination or exploitation. While the national policy hangs in limbo, this policy adopts the Supreme Court mandate of recognizing transgender individuals as a third gender. This and other ways of incorporating interests of marginalized populations such as street vendors have been ensuring that opportunities and rights are advanced for those who need it the most.

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*The dialogue between the various stakeholders who came for the seminars as speakers, participants, beneficiaries and students has enabled us to capture in a holistic way the various aspects of the diverse range of innovations taking place in Karnataka over the past few years. The democratic and participatory process of this exercise was also a reflection of how the Government of Karnataka along with other concerned stakeholders has been working in a convergent fashion, to strengthen and improve every aspect of governance in the state. We would like to make a special mention of Prof. Rajeev Gowda, Member of Parliament, and thank him for his support and active participation.*

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# BIBLIOGRAPHY

## *Media Reports*

1. <http://www.deccanherald.com/content/360492/online-system-karnataka-monitor-rdpr.html>
2. <http://www.thehindu.com/news/national/karnataka/govt-looks-to-create-more-krishi-hondas/article17436676.ece>
3. <http://www.thehindu.com/news/cities/bangalore/KC-Valley-project-to-be-completed-by-August-next-year/article14475940.ece>
4. <http://www.bbc.com/news/world-asia-india-41983359>
5. <http://www.downtoearth.org.in/coverage/democracys-better-half-47642>
6. <http://www.thehindu.com/news/national/karnataka/Woen-in-pachy>
8. <https://economictimes.indiatimes.com/news/politics-and-nation/transparency-is-byword-in-karnatakas-rural-development-and-panchayat-raj-department/articleshow/59185566.cms>
9. [https://economictimes.indiatimes.com/news/politics-and-nation/polythene-lined-ponds-to-rescue-farmers-from-unseasonal-rains/articleshow/47105791.cms?utm\\_source=contentofinterest&utm\\_medium=text&utm\\_campaign=cppst](https://economictimes.indiatimes.com/news/politics-and-nation/polythene-lined-ponds-to-rescue-farmers-from-unseasonal-rains/articleshow/47105791.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst)
10. <http://www.thehindu.com/news/national/karnataka/63-of-school-dropouts-in-karnataka-in-11-to-13-age-group-survey/article19235973.ece>
11. <http://www.thehindu.com/news/national/karnataka/1st-phase-of-pavagada-solar-park-to-be-ready-by-dec/article19779170.ece>
12. <http://bengaluru.citizenmatters.in/revised-master-plan-2031-for-bengaluru-22286>
13. <http://www.newindianexpress.com/cities/bengaluru/2017/nov/26/revised-master-plan-2031-two-new-ring-roads-metro-routes-1711281.html>
14. <http://www.livemint.com/Industry/UEJYwZQT5m3wNvGupBShZJ/How-the-worlds-largest-solar-park-is-shaping-up-in-Karnatak.html>
15. <http://www.thehindu.com/news/national/karnataka/guruchetana-launched-to-empower-teachers-and-improve-quality-of-education/article19626947.ece>
16. <http://www.indiatogether.org/karmapgis-government>
17. <http://www.epw.in/ta/journal/2014/48/commentary/karnatakas-smart-new-solar-pump-policy-irrigation.html>

## *Government Resources*

1. [http://dpal.kar.nic.in/ao2015/17%20of%202015%20\(E\).pdf](http://dpal.kar.nic.in/ao2015/17%20of%202015%20(E).pdf)
2. [http://indiagovernance.gov.in/files/Makkala\\_Panchayat\\_Final.pdf](http://indiagovernance.gov.in/files/Makkala_Panchayat_Final.pdf)
3. <http://raitamitra.kar.nic.in/KAN/Document/agriprop.pdf>
4. <http://www.niti.gov.in/content/dropout-rate-primary-level>
5. [http://kredinfo.in/policy/Karnataka%20Solar%20Policy%202014-21-\(as%20amended\).pdf](http://kredinfo.in/policy/Karnataka%20Solar%20Policy%202014-21-(as%20amended).pdf)
6. <https://www.mybmtc.com/en/news/bmtc%E2%80%8888launches-mobile-app>
7. <http://www.kar.nic.in/bhoomi.asp>
8. <https://www.sarkariyojna.co.in/yuva-yuga-skill-training-scheme-karnataka/>
9. [http://powermin.nic.in/sites/default/files/uploads/joint\\_initiative\\_of\\_govt\\_of\\_india\\_and\\_Karnataka.pdf](http://powermin.nic.in/sites/default/files/uploads/joint_initiative_of_govt_of_india_and_Karnataka.pdf)

## *Other Resources*

1. <https://govinfo.me/ksheera-bhagya-scheme-provide-milk-school-anganwadi-childrens-karnataka/>
2. <http://www.sarvajal.com/water-atm.php>
3. <http://kapricom.org/downloads/about/termsOfRef-en.pdf>

# THE WAY FORWARD

The 12 seminars brought together an eclectic mix of attempts to improve government services for citizens. Each of these initiatives has had to incorporate innovative ways through which it has challenged the status quo in terms of the usual access to government services or goods. While it is premature to judge the efficacy of these initiatives, the sheer fact that they exist, function and are changing how things are done needs to be recognised. At the very least, these are initiatives that can be operationalized, and from which there is something to learn.

Broadly speaking, these initiatives may be thought of as influencing the current status quo in the following ways:

## **Creating markets and institutions that bridge gaps**

ReMS-UMP [Agriculture], SAST [Healthcare], Elevate [IT-BT & ST], Pancha Sutra [Livelihood –Skill Development], Surya Raitha [Sustainability - Energy] and others

## **Building infrastructure to create new possibilities**

KC Valley [Sustainability - Water], Indira Canteens [Nutrition], Bangalore Ambedkar School of Economics [Education], and others

## **Changing service provisions to improve access**

Rural Initiatives [Governance], SMART [Sustainability - Energy], E-Way Bill [IT-BT- S&T], Mathru Poorna, Ksheera Bhagya and Motte Bhagya [Nutrition], Intelligent Transport Service of BMTC [Urban Development] and others

## **Nudging public systems through changes in legal frameworks**

Child Protection Policy [Social Justice & Empowerment], Karnataka Private Medical Establishment Act (Amendment) and Karnataka State Transgender Policy [Law & Justice], Reforms in PRI [Governance], Electrical Vehicle Policy [Sustainability - Energy] and others.

## **Adopting techno-managerial practices to make public systems resilient**

High Court Litigation Management System [Law & Justice], Dynamic Property Mapping [Urban Development], PPP in Hospitals [Healthcare] and others

Each of these are examples of how change may be initiated within or by the government. Yet, these strategies are not general approaches to solving problems that may be extended in a priori manner to other policy arenas. These have taken shape within a department with a deep understanding of the issue terrain, clear ideas on how new technologies can create opportunities, and the knowledge of how this may be implemented. This is a complex process and needs careful negotiation and adaptation of current processes. Instances of changes in legal framework are somewhat outside of this frame since they represent opportunities for democratic and interest groups to engage with the government to negotiate new ground rules, such as in the case of the Street Vendors Act that has been adapted for Karnataka. In many ways, each of these changes are important and worthy of celebration and study as an idea that has been successfully implemented.

Going forward, one important barrier to negotiate is one that looks at initiatives that cut across multiple departments and involves the scaling of not just specific responsibilities of a department, but collective ones for the state. Some of this is already happening – the scheme around promotion of millets is already engaging with nutrition in the latter's bid to provide nutritious meals. Perhaps livelihoods and co-operatives can also be brought in, thereby expanding the value chain for millets, and also bringing into the fold skills and abilities of people at large to develop greater employment around government participation. Thus, one of the ways forward is to think about inter-departmental co-ordination methods that allow for greater convergence and scaling of initiatives as we think of pushing forward on the types of engagements that we have already seen.

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A classic role for government has always been one that seeks to create employment and not just isolated initiatives. Clearly, there is a need for finding ways to link current ideas and initiatives to the potential for creating employment. This is not merely about direct employment generation. Many of these schemes have explicit roles for the private sector to play, especially in servicing procurement needs. Thus, public expenditure has a clear role to play in fostering economic activity within the state. This requires carefully thinking about the integration of the functioning of these schemes with a strategy for promoting economic activity. A clear challenge here is that unless thought through very carefully, such attempts can in fact make the kind of innovations we have seen be harder to achieve.

A key change today in society is the ability of all aspects of the government to generate, store, and analyse large volumes of data. Large scale, platform-driven innovation is possible almost everywhere at reasonable prices and back-ended with a fairly sophisticated IT infrastructure. Much of this is helpful in terms of thinking about the monitoring role of the government. However, the logical further adaption of this is not only to understand how, when and where citizens are using various services, but to also use this to engage in departmental resource planning and financial allocation. Again, some of this is happening already but we are far from being ready at the system level in government.

The boundaries of the government's role is an ever shifting one. What was a problem that needed government engagement can become one that is managed in the private or not-for-profit sectors with loose monitoring. This not only implies that innovation is the bedrock of good governance, but that the government should actively foster such changes. One way to think about the nature of innovation can be the framework presented above. However, to promote such practices, entrepreneurial thinking should be actively encouraged within the government. Enabling entrepreneurs is a common refrain. However, this is typically thought of in the context of the private sector. Enabling entrepreneurs in the public sector will be the game changer.

In this report, we explore a wide range of practices within the government that have been built on a government structure that has been open to thinking about change to begin with. Thus, from a comparative perspective at the sub-national level we present ideas to engage with rather than models to implement directly. We also believe that our multi-stakeholder approach to building dialogues around such innovations presents an interesting way to learn of how it is seen in different contexts. It not only brought different and sometimes discordant perspectives to our discussions, but also in our writing. This reflects the complexity of each issue and reflect points of engagement as we think of the way forward.

# NOTES







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