

# **Workshop on the West Bengal economy: Challenges and Priorities**

## Report

The Indian Statistical Institute (ISI) in collaboration with the International Growth Centre (IGC) held a two day workshop on the West Bengal economy on the 11<sup>th</sup> and 13<sup>th</sup> of January, 2012 at ISI Kolkata. This workshop brought together researchers and policymakers to discuss the challenges to economic growth and priorities for government policy and investment in West Bengal. The workshop comprised sessions on Infrastructure Development, Public Finance, Education, Health and Environment and Land Acquisition.

This report summarises the discussions. It includes an assessment of where West Bengal stands in each of these key areas, and what policy implications and recommendations can be derived from economic research presented at the conference. This report is structured as follows: the Executive Summary lists policy implications for consideration by the West Bengal government. Sections 1-6 summarise the discussions from each of the sessions.

## **Executive Summary**

This section presents the policy implications derived from the research presented and subsequent discussions.

### ***Inaugural***

1. West Bengal should capitalise on its core competency of cognitive capacity in order to achieve fast economic growth.
2. An environment should be created in the state that helps bring back non-resident Bengalis working as scientists, professors etc. in reputed institutions in the west.
3. The government should create a financial hub since banking and finance use a lot of cognitive capability, which could significantly add to job creation.
4. Research should focus on improving rural productivity, capturing Indian as well as global consumer demand, tourism and so on.
5. Efforts should be made to attract multi-national research houses, undertake contract research for them in the state, and to encourage research that is locally useful.
6. Creation of an intellectual property rights strategy is a pre-requisite for a research-based development.
7. It is important to ensure rule of law and sanctity of contracts to attract both knowledge and dollar investors.
8. Direct efforts towards regaining West Bengal's position as the education centre of the country.
9. The government can work to maintain traditional industries as well as simultaneously find new avenues in sunrise industries (petrochemicals, biotechnology, IT and IT-enabled).

### ***Land acquisition for industry***

1. The government should regulate land acquisition transactions between private parties in the interests of both growth and social justice. A new regulatory authority with quasi-

judicial powers, at arms-length from the government, can be set up in order to oversee the process.

2. Setting the compensation price at four times the market price may create a price too high which will discourage industrial growth. Auction-like procedures can be used to determine the correct price.
3. Compensation should be provided to all stakeholders, not just landowners, and should be both monetary and non-monetary.
4. Non-monetary compensation can include jobs and vocational training for those who lose their traditional sources of livelihood through land acquisition and subsequent industrial development.
5. In the long run, the government can invest in infrastructure to boost the attractiveness of non-fertile land in underdeveloped regions to disincentivise acquisition of fertile, agricultural land.

### ***Infrastructure development***

1. West Bengal ranks below the national average on measures of infrastructure such as pucca road connectivity, electricity connections, phone connections and bank branch access. The distribution of infrastructure development is varied across the state, with the most backward districts lying below 60 per cent of the national average on the aforementioned measures. This situation has been largely unchanged over the last decade.
2. Infrastructure development must be viewed as a direct poverty alleviation strategy, not just a strategy for industrial development and economic growth.
3. Infrastructure investment choices by the state can be used to incentivise industrial location in less developed areas with barren or waste land.
4. Lessons can be adapted from Bihar's experience of rapid infrastructure development through increased interagency coordination, facilitation of large-scale contracting, and harsher penalties for corruption.
5. Innovative financing mechanisms, such as the use of private market capital through the issuance of municipal bonds, should be explored.
6. Energy poverty cannot be explained by income poverty. Lack of access to electricity and clean fuel occur due to supply side bottlenecks which need to be removed.
  - a. This can be done through investments in gas and electricity generation and distribution technology, and upgrading the efficiency of existing technologies.
  - b. It can also be done by further incentivising medium sized enterprises to increase innovation and cost effectiveness of solar lighting technology, something already underway in West Bengal.

### ***Public finance***

1. Revenue generation through both tax and non-tax sources in West Bengal is low. This has resulted in a large fiscal deficit. Compared to other states with large fiscal deficits, revenues and expenditures are low in West Bengal. Although the fiscal deficit is decreasing, revenue receipts are not rising sufficiently. Due to interest and debt repayments, the composition of expenditure is skewed towards recurrent rather than capital expenditure.

2. Tax revenue can be increased by making the tax administration more efficient and lowering corruption.
3. New sources of generating non-tax revenue must be explored, such as the use of municipal bonds for infrastructure investment.
4. Joint public-private financing can be used to increase investment in new sectors.
5. Political discipline must be increased to prevent misuse and diversion of productive capital.

### ***Education***

1. While West Bengal's outcomes on literacy and primary education have been at or above the national average, minority groups like Adivasis, Dalits and Muslims fare much worse. Analysis suggests that there are economic, geographic, social, and occupational reasons for this discrepancy, giving rise to the need for a cross-sectoral approach.
2. Investment must be made in school infrastructure at the primary and upper primary level.
3. Resources should be directed towards the most backward districts where there are clear and interlinked community, gender and economic inequities in access to education and educational outcomes.
4. Child nutrition systems should be improved through interventions that cut across the education, health and panchayati raj systems.
5. Technical education can be boosted by reviewing the curriculum, focussing on skill development and employability, funding innovation, and reviewing faculty pay and training.

### ***Health***

1. While West Bengal ranks at or above the all-India averages on most mother and child health statistics, it lies below states in South India which are making a lot more progress. West Bengal continues to have poor infrastructure vis-à-vis other states, is heavily public sector dependent and rural areas do not have enough facilities and trained personnel.
2. Public-private partnerships (PPPs) for healthcare provision can be explored as a means to reduce the reliance and burden on public health systems.
3. PPPs in medical education, all-India recruitment and short-term fellowships can be used to increase the supply of healthcare professionals.
4. A review of the incentives to join the West Bengal medical and health services (WBMES and WBHS) should be undertaken to find ways to increase the number of rural healthcare workers.
5. A review of medical education should be undertaken to improve the quality of doctors and nurses.
6. Information provision through use of IT should be boosted to increase the accountability of healthcare providers.
7. Health agent recruitment, especially payments and matching to households, should be revised to increase effectiveness of information provision to beneficiaries and improve take up of social schemes.
8. Effective water management systems and prevention of water wastage is needed. Segments of the population with an ability to pay can be charged for use of corporation water. Buildings should be required to have water collection systems such as rooftop catchment.

The discussions at the workshop identified clear linkages between public financing, infrastructure development and land acquisition. Additionally, the link between health and education in boosting primary education outcomes, and the relevance of medical higher education to health outcomes was noted. This implies the need for a cross-sectoral approach to policymaking.

## **Section 1: Inaugural session**

Cognitive capacity and research emerged as two key factors that could enable West Bengal to achieve an economic growth rate that is a 3-5 per cent increment over India's baseline growth. Collaboration among the industrial, educational, industrial and policy elite is required in the state.

### ***Cognitive capability can fuel a second "Renaissance"***

Cognitive ability is a core competency of the state that enabled the "Bengal Renaissance" about 100 years ago. West Bengal is able to absorb western knowledge a lot more easily than the other parts of the country.

1. Apart from the FDI channel, knowledge transfers and absorption require creation of an environment in the state that helps bring back non-resident Bengalis working as scientists, professors etc. in reputed institutions in the west.
2. Efforts should be made to create a financial hub in the state since banking and finance use a lot of cognitive capability and these sectors could significantly add to job creation.

### ***Need for a research-based resurgence***

Research needs to be developed as a key tool for economic growth in West Bengal. When research takes place, manufacturing follows automatically.

1. Research ought to focus on improving rural productivity, capturing Indian as well as global consumer demand, tourism and so on.
2. Efforts should be made to attract MNC research houses, undertake contract research for them in the state, and to encourage research that is locally useful.
3. China has been successful in building massive research capacity by attracting Chinese expat researchers to come back to the country for short periods of time and undertake research.
4. An IP strategy is a pre-requisite for a research-based development.

Other suggested areas of focus included regaining the position of the education centre of the country, maintaining traditional industries, finding new avenues in sunrise industries (petrochemicals, biotechnology, IT and IT-enabled), exploiting the tourism potential, building an attractive health sector, developing infrastructure and communication, capitalising on good human resources, and ensuring rule of law and sanctity of contracts that is essential for attract both knowledge and dollar investors.

### ***List of speakers***

Suman Bery (Country Director IGC India-Central, Member of Economic Advisory council to the P.M.)

Partha Chatterjee (Honourable Minister in Charge, Commerce & Industries, Govt of West Bengal)

Purnendu Chatterjee (Industrialist and CEO, Chatterjee Group)

Saugata Roy (Honourable Minister of State, Urban Development, Govt of India)

Joseph Stiglitz (Columbia University)

## **Section 2: Land Acquisition for Industry**

The issue of Land Acquisition for Industry is an important one in the state of West Bengal for several reasons, including the relative scarcity of land as compared to other states. A few important questions emerged in the discussion, in the context of the draft Land Acquisition and Rehabilitation and Resettlement (LARR) Bill 2011, which were:

1. What, if any, should the role of the state be in private land acquisition transactions?
2. How should land acquisition transactions be priced?
3. How should the various stakeholders be compensated?

The research presented aimed to provide some answers to these questions, and these are discussed below.

### ***The state has a role to play in private transactions in the land market***

The consensus that emerged during the discussions was that the state has a role to play even in private transactions in the land market. There are several reasons for this. The first is because the market is only concerned with efficiency, whereas the government might have different social welfare objectives such as equity. Government intervention in private market transactions can lead to more 'humane' outcomes, for example in situations where small landholders are transacting with large buyers and may have low bargaining power. Second, the land market is not always efficient. There is an asymmetry of information leading to market failure, transaction costs are often extremely high making efficient sales unviable and distress sales occur frequently at extremely low prices. Therefore appropriate government regulation of transactions can ensure that adequate compensation is provided to all stakeholders, including landowners, landless labourers etc. and efficient sales can take place. Third, the central government also has a role to play in regulation as the federal structure and competition between states over the location decisions of large industries can lead to a race to the bottom.

### ***The acquisition price determination mechanism in the LARR requires amendment***

The LARR proposes that the acquisition price for land should be a multiple of the market price (2x in urban and 4x in rural). However, a big concern amongst the researchers was that this acquisition price needs to be revisited for two reasons. First, the market price for land transactions, especially in rural areas, is extremely hard to determine. This is because the volume of transactions is low, sale or transfer records are often not filed, or the price is underreported and can be manipulated. Furthermore, research following the failed Singur acquisition showed that there is often a misclassification of plots, and therefore the market price of a plot based on official records might not represent the true market value of the land. The second reason for concern over the LARR pricing mechanism is that the mark-up over market value has been arbitrarily chosen, and could lead to overpricing of land acquisition transactions. The consequences of pricing the transactions too high are that this could lead to low public goods provision, the lack of industrial development and low industrial clustering and agglomeration that could have positive spillovers. Similarly, pricing the transactions too low could also have detrimental effects as the compensation provided to landowners and other stakeholders would be inadequate.

### ***Monetary and non-monetary compensation should be provided for stakeholders***

Several researchers suggested that landowners and other relevant stakeholders that rely on the land should be 'overcompensated' in order to ensure correct incentives for land acquisition, investment as well as fairness considerations. A case study of the Singur project demonstrated that compensation should not be based solely on the average market value of the land. This fails to incorporate heterogeneity of plot characteristics within a region, and other non-use values of land to owners such as financial security or collateral value. Compensation should not be limited to landowners only, as tenant farmers and agricultural labourers bear some of the costs of land acquisition. In addition to monetary compensation, non-monetary compensation should be considered especially where skill development and training might be required as a result of occupational changes post land acquisition and industrial development. The construction of the Cochin airport provides a good example of stakeholder compensation, with respect to the provision of jobs and vocational training.

### ***Auctions as a solution to pricing and compensation issues:***

Auctions have been proposed as an efficient solution to the problem of setting transaction prices and determining viability of transactions as they can:

1. Determine who to take land from as willingness to sell is elicited through an auction process.
2. Lead to an efficient and fair price in a transparent process, rather than decided by government authorities on the basis of inadequate information.
3. Ensure only viable projects can continue, through the incorporation of the fair price for land in the calculation of NPV of the project.
4. Enable the determination of appropriate compensation for landowners.

Some shortcomings of auctions that need to be addressed and further studied:

1. Compensation split between landowners and non-landowners is not determined through this process.
2. Costs such as relocation, job provision, vocational training imply some ad hoc payments will have to be made.
3. Negative project externalities, such as pollution and waste generation following industrialisation, are not incorporated.
4. There may be collusion amongst bidders thus undermining the fairness of the process.

### ***Policy implications:***

1. State regulation of private land acquisition transactions is needed. A new regulatory authority with quasi-judicial powers, at arms-length from the government, can be set up in order to oversee the process.
2. Compensation must be provided to all stakeholders, not just landowners.
3. Both monetary and non-monetary compensation should be considered.
4. Auctions can be used to determine the fair land acquisition price and ensure only viable projects are undertaken.
5. Private purchasers should be incentivised to acquire low productivity land or land in regions with low population density. This could be occur through public investment in infrastructure development in these regions

### ***List of speakers***

Debabrata Bandyopadhyay (MP & former Land Reform Commissioner)

Sanjoy Chakravorty (Temple University, USA)

Partha Chatterjee (CSSSC and Columbia University, USA)

Bhaskar Dutta (University of Warwick, UK and ISI)

Parikshit Ghosh (Delhi School of Economics)

Dilip Mookherjee (Boston University, USA and IGC)

## **Section 3: Infrastructure Development**

This session focussed on transport, primarily roads, and energy infrastructure, with data and analysis presented to show why infrastructure development must be a priority for West Bengal and what lessons can be learned from elsewhere. Two important ideas were introduced in the session:

1. While infrastructure development leads to an increase in the net state domestic product, implying overall economic development, there is also a strong and direct relationship between infrastructure development and a decrease in headcount measures of poverty. This implies the need to think about infrastructure development as a direct strategy for human development, not just for boosting state GDP growth rates.
2. In the context of energy infrastructure, it is important to note that income poverty measures do not adequately capture energy poverty of households, measured as adequate access to clean fuel and electricity for subsistence activities. A concerted effort must be made to decrease supply side bottlenecks to energy access and consider non-traditional measures of poverty in social welfare policy making.

### ***Status of West Bengal***

West Bengal ranks below the national average on measures of infrastructure such as pucca road connectivity, electricity connections, phone connections and bank branch access. The distribution of infrastructure development is varied across the state, with districts like Puruliya, Bankura and Murshidabad being the most backward, lying below 60 per cent of the national average on the aforementioned measures. Furthermore, the situation has been largely unchanged over the last decade. West Bengal has a lower proportion of surfaced and motorable roads than the all-India average accounted for by the large proportion of roads constructed under the Panchayati Raj programme. Although West Bengal is a power surplus state, and surpasses the national average on access to clean fuel, it is an energy poor state as measured by access to cooking fuel (in any composition) and electricity for lighting needed to meet basic subsistence consumption needs. This lack of access to energy cannot be explained by income poverty. It is more likely due to supply side bottlenecks that result in poor availability of electricity and clean cooking fuel.

Poor infrastructure is also likely to create a constraint on the growth and development of industry. One example of this is the development of the services and IT/ BPO sector in West Bengal. Although this sector is growing rapidly, in order to effectively capitalise on the talented pool of graduates emerging from the system and reduce out-migration from the state, infrastructure development that supports the services industry and maintains the low cost advantage of Kolkata is critical. Similarly, infrastructure development can serve as an incentive for industries to locate in less developed areas, where land cannot be used for agriculture.

### ***West Bengal has experienced reduced headcount poverty following infrastructure development***

There is clear evidence that demonstrates that West Bengal has had successful instances of infrastructure development leading to lower poverty. One study showed that building a national highway (NH2) led to a reduction in the proportion of the population living below the poverty line in the surrounding areas, and also positively affected the wage rates available to individuals

residing in villages close to the highway. While further exploration of the channels by which the road infrastructure led to poverty reduction is needed (e.g. was it access to larger towns, location of industry due to road connectivity etc.) the study implies the need for investment in infrastructure to increase connectivity of remote areas which can directly reduce poverty.

### ***Lessons from Bihar on how to boost infrastructure development***

An analysis of the turnaround in Bihar (tenfold greater road length and 50 per cent lower travel time in large parts of Bihar over a five year period) suggests that this was due to better administration, the setting up of an infrastructure development agency, better coordination amongst all the local and state agencies involved, facilitation of large scale contracting through a review and simplification of contractor registration, bidding rules etc., and increased monitoring and enforcing penalties against corruption. While the socio-economic, institutional and political situations in Bihar and West Bengal are not the same, a review of the bottlenecks to infrastructure development and provision, and adopting appropriate lessons from other states that have been successful at overcoming these challenges can be useful.

### ***Policy implications***

1. Infrastructure development should be incorporated into the state's poverty alleviation strategy not just the industry development strategy.
2. Infrastructure investment should be used to incentivise industrial location choices in less developed areas and areas with limited alternate land use.
3. Indirect and intangible benefits of infrastructure projects on the area's resident population should be incorporated into cost-benefit analysis.
4. Supply side bottlenecks to energy access, such as the availability of LPG, should be removed.
  - a. This can be done through investments in gas and electricity generation and distribution technology, and upgrading the technical efficiency of existing energy provision.
  - b. It can also be done by further incentivising medium sized enterprises to increase innovation and cost effectiveness of solar lighting technology, as is already underway in West Bengal.
5. Infrastructure development can be achieved through
  - a. interagency coordination,
  - b. facilitating large scale contracting through simplified contractor registration and bidding rules, and
  - c. increased monitoring and penalty enforcement against corruption.

### ***List of speakers***

Rajesh Chakrabarti (Indian School of Business)

Anup Chanda, IAS (Additional Chief Secretary, Govt of West Bengal)

Dipankar Dasgupta, ISI (Retired)

Anupam Khanna (Chief Economist, NASSCOM)

Ramprasad Sengupta (Jawaharlal Nehru University)

## **Section 4: Public Finance**

The public finance situation in West Bengal needs immediate attention. The government needs to lower its fiscal deficit and increase revenue generation in order to finance the capital formation needed to support long run development. A few mechanisms to boost revenue generation were discussed during the session, with innovative financing instruments presented for (1) infrastructure development, and (2) development of new sectors.

### ***Status of West Bengal***

A great concern in West Bengal is the low revenue generation by the government through both tax and non-tax sources. This has resulted in the government taking on considerable debt to meet short run financial commitments. In the longer run it implies greater interest and debt repayment, stunting capital expenditure on productivity enhancing assets. Although the fiscal deficit is decreasing, revenue receipts are not rising sufficiently, and the composition of expenditure is skewed towards recurrent rather than capital expenditure. Compared to other states with large fiscal deficits, revenues and expenditures are low in West Bengal, and the government needs to boost revenue generation in order to increase capital expenditure on public goods and infrastructure.

### ***Possible explanations for low revenue generation***

The state government's low revenue generation ability can possibly be explained by the following factors:

1. Lack of industrialisation leading to a lower tax base. However it is important to note that less industrialised states like Bihar and Chattisgarh have higher own tax/ NSDP ratios.
2. Inefficiency in the tax collection administration.
3. Corruption.
4. Lower share of discretionary grants from the central government.

Efforts must be made to increase tax revenues through greater efficiency and monitoring, and non-tax revenues through innovative financing instruments.

### ***Financing infrastructure through private market capital: municipal bonds for urban development***

Low levels of revenue generation and expenditure are not just a problem for the state government. Urban local bodies (ULBs) responsible for providing social and public goods such as sewerage, drinking water, schools etc. also face financing constraints. However, in cities like Ahmedabad, Bangalore, Hyderabad and Nagpur, ULBs have been issuing municipal bonds with 1 to 9 year maturity periods to raise funds from the private market to finance investments in urban development and infrastructure.

The advantages of municipal bonds, over other sources of financing, are:

1. Income fluctuations from other sources such as property taxes, municipal fees, state government transfers etc. can be smoothed out.
2. Increased fiscal discipline on the tax administration because debt commitments require regular repayments.

3. Increased political discipline to ensure investment in profitable projects and likely lower diversion than equity investments, due to the commitment to repay debt.

The primary problem with using municipal bonds to finance infrastructure investments is that individual lenders might require extremely high premiums to overcome the information asymmetry and political risk of non-payment. This is likely to make bond issuances financially unviable. However, the use of credit rating agencies to rate the bond issuances, and possible securing of ULB bonds by the state government, are likely to increase investor confidence in municipal bonds.

### ***Joint public and private financing to support the development of new sectors***

Low wages, shortage of formal skills and low access to technology inhibit the development of new sectors. A critical component is learning-by-doing and the building of knowledge through trial and apprenticeship. However, this learning-by-doing requires the ability to absorb short term losses before new sectors or industries become profitable. Therefore, in order to develop new sectors that are likely to be loss-making for an uncertain duration, financiers require deep pockets and a considerable appetite for risk and uncertainty. However, loss-financing alone has not led to low investment in new sectors. In order to ensure the successful generation of sectoral learning, all stakeholders must exert high levels of effort. However, those directly involved in the trials and knowledge generation do not bear the direct financial risk of failure, and therefore investors cannot ensure they exert sufficient effort. It is this loss-financing coupled with the inability to contract on or ensure the high effort by all stakeholders that results in underinvestment.

Therefore, one mechanism to increase investment in new sectors is joint public-private financing which spreads financial risk and eliminates the limited liability of those responsible for exerting effort and can ensure success of new enterprises. In addition to the design of joint financing instruments, contract enforcement and governance must be strengthened to ensure accountability to investors. Lessons can be learned from the experience of the Indian auto takeoff in the 1980s or the successful development of the garment industry in Bangladesh.

### ***Policy implications***

1. Increase tax revenue by increasing efficiency and lowering corruption of the tax administration.
2. Develop innovative sources of non-tax revenue and private capital generation such as municipal bonds for infrastructure.
3. Increase political discipline to prevent misuse and diversion of productive capital.
4. Use innovative joint public-private financing to incentivise investments in new sectors.

### ***List of speakers***

Sanjay Banerjee (University of Nottingham, UK)

Mushtaq Husain Khan (University of London, UK)

Abhirup Sarkar (Indian Statistical Institute)

Tapas Sen (National Institute of Public Finance and Policy, New Delhi)

## **Section 5: Education**

While West Bengal's outcomes on literacy and primary education have been at or above the national average, minority groups like Adivasis, Dalits and Muslims fare much worse. Data suggests that there are economic, geographic, social, and occupational reasons for this discrepancy. This ought to be incorporated in educational policy. Similar patterns are seen in health and nutrition outcomes, implying the need for a cross-sectoral approach.

### ***Status of primary education in West Bengal***

Data from the 2001 census shows that the average literacy rate in West Bengal is 68.6 per cent which was above the national average of 64.5 per cent. However, the literacy rate for Adivasis is much lower at 43 per cent, Dalits at 59 per cent, and Muslims at 57.5 per cent implying considerably poorer outcomes for the most economically backward communities. The overall gender gap for the state stands at 17.4 per cent versus the all-India gender gap of 14 per cent, and when broken down by communities, this gap is 14.8 per cent for Muslims, 23.6 per cent for Dalits and 28.2 per cent for Adivasis. Part of the increased gender gap for Dalits and Adivasis, relative to the state average, can be explained by the relatively larger proportion of women from these communities entering the labour force, implying there is an effect of occupational choices on education in the largely agrarian and most backward districts of the country. Although the literacy rates rose by 8.4 per cent, as per the 2011 census, half the districts in West Bengal remained below the national average, with two districts trailing Bihar which has the lowest literacy rates in India. Furthermore, it is unlikely that caste and community disadvantage patterns have changed considerably over this period.

Nutrition and education are also interlinked, with a study showing that 89 per cent of children in a sample of class 1 students are undernourished. Of these, 69 per cent were Dalits and Muslims, 38 per cent come from below poverty line households, and 17 per cent of their fathers and 23 per cent of their mothers are illiterate, demonstrating similar inequities based on socio-economic and caste/ community backgrounds. The infrastructure available for primary education in West Bengal is also extremely poor, with a large gap between the richest and poorest four districts in pupil-teacher ratios, number of schools per square kilometre etc. A study on the quality of primary education in West Bengal shows that there are low means and a high variance across districts in cognitive test performance. The pass rates in Maths and Bengali are extremely low, with only 30 per cent of students passing maths and 25 per cent passing Bengali. Average attendance rates of students are low, at about 54 per cent.

The ratio of upper primary to primary schools is 6:1, which increases to 11:1 in the most backward districts, once again implying poorer access based on socio-economic criteria. In urban areas 1 in every 3 schools provides science education, whereas this ratio falls to 1 in every 6 in rural areas. Secondary and higher secondary education also face challenges of infrastructure and unequal access.

It is clear that education in West Bengal at all levels is lagging and there are severe inequities on the basis of caste/ community, geography and economic status.

### ***Improving primary education outcomes in rural areas***

A breakdown of the data collected in 240 government primary schools, across 6 districts, suggests that better test scores in primary education are correlated with factors such as:

1. Increased parent awareness
2. Use of internal assessments in schools
3. Less leave taken by teacher
4. Better handling of disciplinary issues
5. Community interaction and involvement via VECs

These provide concrete mechanisms that can be further explored to help design policy interventions to improve the quality of primary education in West Bengal, and boost student learning outcomes.

### ***Improving technical education: a practitioner's overview***

The experience of technical education in West Bengal suggests that there are several steps that need to be taken to improve the challenges faced that lead to poor quality graduates from the engineering system. These steps are:

1. Investment for laboratories to increase innovation
2. Ensure outcome based learning and experiential learning
3. Increase the focus on employability and skill formation
4. Increase the number of interdisciplinary programs
5. Ensure funding for faculty development and continuous training

### ***Policy implications***

1. Focus resources in the most backward districts, and try and break negative geography-gender-caste-community-occupation patterns and linkages.
2. Improve primary school infrastructure; both physical infrastructure and teacher quality.
3. Invest in more upper primary schools, the lack of which might be one reason for the large gender gap in upper primary education.
4. Improve parent awareness and involvement to raise student outcomes.
5. Improve child nutrition through interventions that cut across the education, health and panchayati raj systems.
6. Boost technical education by reviewing the curriculum, focussing on skill development and employability, funding innovation, and reviewing faculty pay and training.

### ***List of speakers***

Sugata Bose (Harvard University, USA)

Partha Pratim Chakraborty (Indian Institute of Technology, Kharagpur)

Jyotsna Jalan (Centre for Studies in Social Sciences)

Sugata Marjit (CSSSC and Council for Higher Education, West Bengal)

## **Section 6: Health and environment**

While West Bengal is not doing as well as the best faring states of south India, it is at or above the all-India averages on most mother and child health statistics. For instance, the Infant Mortality Rate (IMR) stands at 31 vis-à-vis the national average of 47 (4<sup>th</sup> in the country among the bigger states), birth rate is 16.8 vis-à-vis the national average of 22.1 (4<sup>th</sup> in the country among the bigger states), and Maternal Mortality Rate (MMR) is 145 vis-à-vis the national average of 212 (5<sup>th</sup> in the country among the bigger states). However, West Bengal continues to have poor infrastructure vis-à-vis other states, is heavily public sector dependent and rural areas do not have enough facilities and trained personnel due to the Kolkata-centric development of the healthcare system. Improvements in the health care system and outcomes can be made by improving the supply-side through better infrastructure, funding and training of medical professionals, and demand-side initiatives such as providing individuals with better information on the public health services available to them to increase take-up.

### ***Status of West Bengal***

An analysis of the National Family Health Survey (NHFS) data from 1998 to 2006 shows that in terms of child stunting (height for age more than two standard deviations below the international reference mean) and child wasting (weight for age more than two standard deviations below the international reference mean) West Bengal is performing at or above the national average. Child wasting has increased whereas child stunting has been reduced over this period. The reductions in child stunting are driven by improvements in the outcomes for the bottom two quintiles, implying strong wealth effects. Despite the improvements in child stunting, on average, there continue to be imbalances in outcomes with girls faring worse than boys. Stunting is also more prevalent in rural areas compared to urban areas, implying unequal gains. Mother's health outcomes in West Bengal have marginally improved, with the proportion of malnourished mothers now close to the all-India average. However the link between mother and child health outcomes has not been broken. More educated mothers have healthier children, and where mothers are severely malnourished, children are more likely to be wasting. West Bengal has been one of the best performers nationally in terms of improvements in infant and child mortality rates. However, the gender disparity against girls in infant mortality rates has worsened over the duration under study. The wealth and education effects observed in child stunting is also observed in mortality rates.

It is unclear whether these improvements in mortality and health outcomes can be ascribed to the success of the PHC system in West Bengal, or are simply due to overall improvements in human development. The healthcare provision in West Bengal has shown certain supply-side problems. Although the system is not severely underfunded, there seems to be a shortage of health care professionals and an inequality of distribution of infrastructure and manpower, biased in favour of Kolkata with the rural areas suffering. This shortage of medical professionals and health workers in the rural areas might be partly due to the skewed incentives for joining the West Bengal Medical Service (WBMS) over the West Bengal Health Service (WBHS). The decentralised system is difficult to monitor and disciplinary mechanisms for non-performing health care providers are difficult to enforce.

Poor quality of air and drinking water in the state is posing various health risks. Given the levels of Benzopyrene in the Kolkata air, theoretical calculations indicate that exposure to the air for 16 years at the rate of 8 hours per day may cause cancer. 11 districts are arsenic contaminated and 6 districts are fluoride contaminated. The number of affected wards has increased from 3 in 1980 to 113 in 2011. According to the Government of West Bengal, close to 36 per cent of the population is at risk of arsenic contamination through groundwater. Syringes used for injections have also been found to be contaminated as the groundwater used by manufacturers is not always purified adequately. In an area of 201 square kilometres, 6.4 tonnes of arsenic is withdrawn from the soil implying contamination via crops. Drinking arsenic contaminated water or exposure to contaminated cow dung can lead to cancer.

### ***Lessons that have been learned: information matters***

The use of information technology (IT) in monitoring Out Patient Departments (OPD) through SMS has been successful in increasing citizen awareness and leading to greater accountability and performance. This can be expanded to collect additional data and information on other health care services.

Information provision is also important to increase demand for health services. The use of agents that are provided performance-based incentive payments has the ability to increase the knowledge of beneficiaries about programmes like the Rashtriya Swasthya Bima Yojana (RSBY), which in turn can increase take up. Matching agents and households on the basis of social indicators such as caste also has the same effect of increasing household knowledge, and therefore take up. This is important learning as it points to demand side measures that can be implemented in addition to the supply side initiatives that are more widely focussed on.

### ***Policy implications***

1. Need to examine the reasons for the continued reliance on public healthcare provision as opposed to increased use of private providers as seen in several other states. This will help understand whether and how to develop PPPs for provision.
2. Need to expand the supply of medical and health care providers. Possible ways to do this are PPPs in medical education, all-India recruitment and short-term fellowships.
3. Need to incentivise health care providers to serve in rural areas, possibly through a review of the incentives for joining the WBMES over the WBHS.
4. Need to appropriately recruit and incentivise agents to increase information and knowledge about health and other social welfare schemes.
5. Need to increase the use of information technology for monitoring and to provide information to citizens to increase accountability of providers.
6. Need to review medical education and the quality of graduates from the system.
7. Need to create effective water management systems and prevent water wastage. Segments of the population with an ability to pay can be charged for use of corporation water. Buildings should be required to have water collection systems such as rooftop catchment.

### ***List of speakers***

Dipankar Chakraborty (Jadavpur University, Kolkata)

Maitreesh Ghatak (London School of Economics, UK and IGC)

Sanjay Mitra ,IAS (Principal Secretary, Health, Government of West Bengal)  
Sukumar Mukherjee (Medical College, Kolkata (Retd))  
Ranjan Ray (Monash University, Australia)

## **Concluding Session**

The two day workshop concluded with a discussion of priorities for future research on the West Bengal economy<sup>1</sup>. A vote of thanks to all participants was given by Bimal Roy (ISI Kolkata), Dilip Mookherjee (Boston University, IGC), Abhirup Sarkar (ISI Kolkata) and Sandip Mitra (ISI Kolkata). The speakers at the session also sought inputs from the audience on ideas for similar conferences in the future.

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<sup>1</sup> These are detailed in the Executive Summary.