

NATIONAL INSTITUTE OF ADVANCED STUDIES

The National Institute of Advanced Studies (NIAS) was conceived and established in 1988 by the vision and initiative of the late Shri J.R.D. Tata primarily to nurture a broad base of scholars, managers and leaders to address complex and important challenges faced by society through interdisciplinary approaches. The Institute engages in advanced multidisciplinary research in the areas of humanities, social sciences, natural sciences and engineering, as well as conflict and security studies. The NIAS has been recognised as an “Institute of Exceptional Repute” by the NITI Aayog in January 2019.

RESEARCH PROGRAMMES

The Institute promotes trans-disciplinary research and builds synergy within and across disciplines with meaningful interactions.

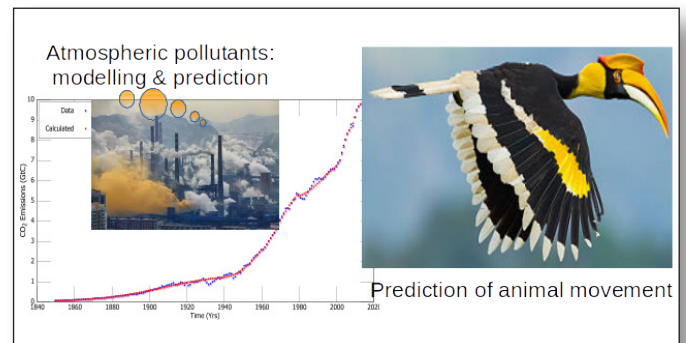


Animal Behaviour and Cognition

The Programme addresses basic and applied research related to behaviour, cognition, ecology, genetics and conservation status of different wildlife species across India with an emphasis on primates, elephants and fishes. The knowledge gained is applied to areas such as human-wildlife conflict, environmental education and decision-making. The outcome of such studies have influenced government policies. Research studies undertaken currently include human-animal interactions involving macaques, street dogs and cows.

Complex Systems

The Programme performs a broad spectrum of inter and trans-disciplinary research to understand and explain real world phenomena by constructing predictive mathematical models giving useful and practical solutions. The current research includes modelling of climate change impact on marine ecological systems, animal movement in heterogeneous landscapes including human settlements and growth of atmospheric pollutants. The other areas of research include coupled neuron dynamics, complex dynamics of simple nonlinear mechanical systems, physics of sensory systems and nonlinear oscillations.



Conflict Resolution

The Programme aims to develop an inclusive knowledge base that would effectively help to address the major conflicts that affect India or have the potential to do so. The dissemination of such knowledge influences popular perceptions and policies aimed at conflict resolution. In its efforts to better understand domestic conflicts in India, the programme has focused on four specific areas - Interstate water conflicts, radicalisation, conflict in Northeast India and Maoist conflict. The knowledge about conflicts provides interventions for popular discourse and policy.

Consciousness Studies

The Programme primarily focuses on the humanistic and health aspects of consciousness along with a critical approach to the empirical theorisation of the self in humans and animals. The current research interests include communication and behavioural decision-making, social cognition, information theory, conceptual mathematics and quantum approaches to consciousness. The interdisciplinary issues connecting literature, psychology, data science, consciousness studies and philosophy are addressed.



Education

The Programme has made significant contributions in the areas of school quality, professional development of teachers, education among the adivasis and other disadvantaged groups, women in the Science, Technology, Engineering and Medicine (STEM), education of the gifted and talented children as well as higher education. Currently, issues related to developing protocol for identification and mentoring of gifted children and integrating vocational education in the higher education system are being addressed.

Energy and Environment

The Programme is focusing on research on all forms of energy - coal, nuclear, gas, hydro and renewables as well as their environmental and societal implications. Inputs on national policies related to coal, minerals, steel and power and specific policy interventions related to mine closures and clean coal technology have been provided. Current research is closely linked with the sustainable development goals related to affordable energy and climate change.



Heritage, Science and Society

The Programme is engaged in exploring new perspectives in the study of history and archaeology by identifying linkages of science and technology with culture, society and civilisation. The study of archaeological artefacts, monuments and sites have been undertaken through inter-disciplinary technological dimensions. Research areas explored include archaeomaterials and archaeometallurgical studies such as on Chola bronzes; iron and steel heritage; geospatial applications and landscape archaeology; digital approaches in heritage documentation; literature, art and architecture.

Inequality and Human Development

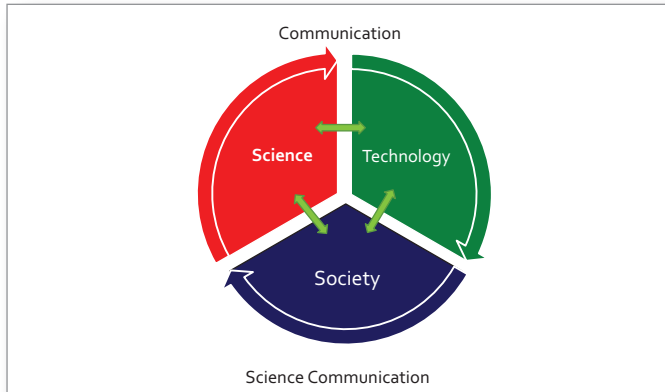
The initiative aims to develop policy options based on multi-disciplinary and empirically consistent conceptualization of inequality. It advocates public discourse to enable more informed policy choices on the subject.

The current research focus has been on the socio-economic process of the transition of an agrarian economy into a non-agrarian one. This builds on studies related to MGNREGA, emergence of non-agrarian villages in Kerala, phases of globalisation, urbanisation and engines of growth and socio-economic dynamics of science and technology.



International Strategic and Security Studies

The Programme conducts academic and policy research on a range of issues having bearing on national security. The research focus includes examination of science and technology capability, developments in weapon systems and their implication, space capability and their employment for strategic purposes, unmanned air systems, issues of cyber security and adaptation of AI in defence systems, geopolitical issues in our neighbourhood and our region and marine domain awareness. Important contributions of the programme include the development of missile performance and satellite situational awareness tools, translation of the book *Space, War and Security* into Chinese, developing comprehensive missile database as well as offering an annual course on Space and Foreign Policy.



Science Communication

The Programme addresses the development of methodologies of creating awareness among the public to enable absorption of the rapidly developing technologies and informed decision-making. The research activity centres around studying various dimensions of risk perception regarding novel and emerging technologies; outlining strategies based on science and technology communication to manage the public fear of hazards; developing platforms for enhancing interaction between scientists and the public and develop a roadmap to strengthen the interactions by using effective communication strategies.

Science Diplomacy and Peace Research

The importance and nebulousness of peace is planned to be studied through the newly founded International Peace Research Initiative through national and international interactions and debates as well as researched papers and commentaries. The Programme has taken up the Science Diplomacy Initiative and functions as the Secretariat for the BRICS Young Scientist Forum. Major areas of research include Arctic Studies, Blue Economy and Maritime affairs.



Urban and Mobility Studies

The Programme explores the dynamics of urbanisation and migration in post-liberalisation India, including changing urban economies, labour and livelihoods, new pathways of social and spatial mobility, and diverse social and cultural transformations at the interstices of the urban and the rural. The programme draws on theories and methodologies from sociology and social anthropology, geography, urban studies, gender studies and allied disciplines. Research studies are centred around the social consequences of Bengaluru's neoliberal urbanisation, the making of a new city in Andhra Pradesh, youth migration into the urban service economy, and the impacts of large-scale real estate development in Bengaluru and Jakarta.

DOCTORAL PROGRAMME

The NIAS Doctoral Programme is a vibrant interdisciplinary programme which has produced over 40 theses so far in various disciplines. The programme encourages students to actively adopt a multidisciplinary approach to research. The programme is recognised by Mysore University, Manipal Academy of Higher Education and the University of Trans-Disciplinary Health Sciences and Technology, which award degrees.

NIAS has a collaborative Split-Site Doctoral programme in Archaeology and Drama with Exeter University in the United Kingdom. Ten PhD degrees have been awarded by the Exeter University under the programme.

CAPACITY BUILDING

Course for Senior Executives

The Senior Executive Programme envisages developing effective and sensitive leadership in India. First organised in January 1989, with the involvement of Shri. JRD Tata and Dr. Raja Ramanna, this flagship residential programme has over the years developed a niche for itself in the country. Thirty three courses have been conducted during the last three decades. Over the years, many of the alumni of this course have occupied high offices in Government service, while others have become leading lights of the corporate sector.

Course for Scientists

For more than a decade now, NIAS has been organizing a series of residential training courses for senior and mid-career scientists working in different labs in India supported by the Department of Science and Technology (DST), Government of India with a focus on social, economic, scientific, and technological implications of S&T. These training programmes also provide a platform for scientists cutting across different S&T labs to interact among themselves.

Associates' Programme

The Associates' Programme began in 1993 and essentially shares research outputs and experience, both intellectual and cultural, with a select group of distinguished persons from widely different backgrounds. Various lectures, plays and performing arts events by eminent scholars and artists are organised on a regular basis.

NIAS COLLABORATIONS

NIAS has actively developed collaborations with various institutions, in India and abroad. These collaborative ventures relating to research, education and policy impacts address issues ranging from grassroots innovation in science and technology to energy, ecology, healthcare, heritage, social concerns such as inequality in society, etc.

NIAS LIBRARY

NIAS library has developed a well-balanced collection of books across disciplines relevant to research programmes of the Institute. The current holdings include 19800 books, 570 Kannada books, 67 print journals, 1593 online journals, 2660 back volumes of journals, 290 National Sample Survey Organization and Census datasets as well as audio and video recordings. It subscribes to online archives and databases which includes JSTOR, EPW archives, EPWRF Time Series Database, indiastat.com, CSE Environment Government Database and CSE Environment-in-Court Database. The Library catalogue is accessible via internet. An institutional repository containing the research output of faculty and students as well as institutional documents is available online.

PUBLICATIONS

Research outcome of studies conducted at the Institute are disseminated through publications in peer-reviewed journals, edited volumes, books, monographs and proceedings. In addition, NIAS has an in-house publication programme which publishes reports, working papers, seminar and conference proceedings, backgrounders, lectures as well as books. Information about new publications is disseminated through NIAS alerts, website, social media and institutional repository on a regular basis to all stakeholders.

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NIAS is a society registered under the Karnataka Societies Registration Regulation Act, 1960. The Institute is an autonomous organisation governed by a Council of Management. The Council is currently chaired by Shri. S. Ramadorai. Dr. Shailesh Nayak is the Director of the Institute.