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Decoding Indian Genes

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The Indian Genome Variation Consortium, led by Dr Samir K Brahmachari, has completed a monumental exercise in mapping the genetic landscape of India's one billion population. Starting in 2005 and in less than three years, spending just about Rs 25 crore, the network of some of the country's top publicly-funded laboratories has provided the nation the contours of its genetic make-up.

This exercise was extremely important. The International HapMap Consortium had clubbed Indian population as part of the Asian group, though Indian accounted for over six percent of the Earth's inhabitants. The Indian effort has shown that it was scientifically inaccurate to club Indians with other Asian populations. In fact, the study has blown away the myth that Indians were genetically homogeneous. Now we know that Indian population is made up of four distinct groups: Austro-Asiatic (indigenous tribals), Tibeto-Burmans, Indo-Europeans(Caucacians) and Dravidians.

It is clear that all the world's major racial groups are represented in India and so the country could become a laboratory to conduct pharmacogenomic studies. In fact, in the future the developer of a new drug could conduct all his clinical studies within India and generate sufficient data on its impact on different populations. Also, the social stratification has ensured that there are dozens

of isolated populations, which could provide the perfect setting to look for disease-specific genes and look for causes of various genetic traits.

More will be heard about the study which has been published in the Journal of Genetics, brought out by the Bangalore-based Indian Academy of Sciences. According to the authors, itself a record 150 people, some of the international journals like Nature declined to published as they could not find scientists with relevant expertise to review the scientific paper.

It is understood that the study has generated a lot a valuable data which would have a bearing on the India-specific social stratification practices in the name of caste. Due to the sensitive nature of this issue, the caste-related data has not been disclosed. Another important disclosure is the confirmation that Dravidians who are now confined to the four southern states of Tamil Nadu, Karnataka, Andhra Pradesh and Kerala, were spread all over India before they were pushed back to the present geography after the arrival of the Indo-European speakers. More will be heard about this too in the near future.

While the decoding of the Indian gene made headlines in April, another key major initiative that will have a lasting impact on Indian biotechnology has been unveiled in the form of the draft National Biotechnology Regulatory Act. The legislation will pave the way for setting up a unified biotechnology regulator, the National Biotechnology Regulatory Authority (NBRA) which is a key component of the National Biotechnology Policy. The Department of Biotechnology (DBT), which is piloting this initiative, has continued its highly-appreciated public consultation process, by publishing the draft legislation for discussion among all stakeholders in the next five months.

DBT has already consulted the biotech regulators of the US and Canada and plans to take inputs from a dozen other biotech regulators. NBRA also will have the opportunity to adopt the best practices of several other regulatory agencies that have been set up in the country since the economy was thrown open in 1991. DBT plans to have six major consultative sessions with the industry and other stakeholders before finalizing the draft legislation in September 2008. A good beginning has been made. There are still some gray areas related to the structure and contours of the autonomy that will be vested with NBRA and process of appointment of the head of the regulatory agency. The five-month long consultation process will, hopefully, provide the inputs to make NBRA a regulator par excellence in the decades to come.

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