



## News Analysis (13 Oct, 2018)

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### Mission to Sequence Genes of Indians

India is planning a major mission to sequence the genes of a large group of Indians similar to projects in the United Kingdom, China, Japan and Australia.

- This will improve health as well as facilitate designing of 'personalised medicine.'
  - Personalized Medicine is the concept that managing a patient's health should be based on the individual patient's specific characteristics, including age, gender, height/weight, diet, environment, etc.
  - Pharmacogenetics (also termed pharmacogenomics) is the field of study that examines the impact of genetic variation on the response to medications.
  - This approach is aimed at tailoring drug therapy at a dosage that is most appropriate for an individual patient, with the potential benefits of increasing the efficacy and safety of medications.
- This was among the key decisions taken at the Prime Minister's Science, Technology and Innovation Advisory Council (PM-STIAC) in its first meeting.
- The Ministry of Health and Family Welfare and the Department of Biotechnology (Ministry of Science and Technology) would be closely associated with the project.
- It can be noted that a group of Indian scientists and companies are already involved with a 100k GenomeAsia project, which aims to sequence the whole genomes of 100k Asians, including 50,000 Indians.

#### **Prime Minister's Science, Technology and Innovation Advisory Council (PM-STIAC)**

- The PM-STIAC (Science, Technology, Innovation Advisory Committee), was constituted in August, 2018 to advise the Prime Minister on all matters related to S&T, innovation and monitor the implementation as well.
- It is a 21-member committee, chaired by Principal Scientific Advisor to the Government, presently K Vijay Raghavan.
- PM-STIAC replaced the Scientific Advisory Committee (SAC) to PM and Cabinet.

## Genome Sequencing

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- A genome is an organism's complete set of DNA, including all of its genes.
- Genome sequencing is figuring out the order of DNA nucleotides, or bases, in a genome—the order of As, Cs, Gs, and Ts that make up an organism's DNA.
- It is method of isolating and identifying variable elements within the base-pair sequence of DNA (deoxyribonucleic acid) as it shows high degree of polymorphism (variation) at genetic level. Polymorphism forms the basis of genome sequencing since DNA from every tissue (such as blood, hair-follicle, skin, bone, saliva, sperm etc.) from an individual show the same degree of polymorphism

## Background

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- Ever since the human genome was first sequenced in 2003, meaning, that the entire DNA pattern in the cell that lends people their unique identity was deciphered, several countries have announced initiatives to map genomes of their resident populations.
- The Council of Scientific and Industrial Research in 2009 announced that it had sequenced the genome of an Indian, then making India one of six countries to achieve such a feat.
- However, no compendium of genes that differentiate Indian populations from, say Caucasian or African genomes exist. Therefore, the announcement by PM-STIAC is aimed to create such mapping of population of India.

## Human Genome Project

- The Human Genome Project (HGP) was an international, collaborative research program whose goal was the complete mapping and understanding of all the genes of human beings. HGP researchers have deciphered the human genome in three major ways: determining the order or "sequence" of all the bases in our genome's DNA; making maps that show the locations of genes for major sections of all our chromosomes; and producing what are called linkage maps.
- It was a result of the International Human Genome Project comprising scientists from the US, UK, France, Germany, Japan and China. The Project began in 1990, and the sequencing was completed in 2003.
- The HGP has revealed that there are probably about 20,500 human genes. The completed human sequence can now identify their locations. This information can be thought of as the basic set of inheritable "instructions" for the development and function of a human being.
- The International Human Genome Sequencing Consortium published the first draft of the human genome in 2001 with the sequence of the entire genome's three billion base pairs some 90 percent complete.

- Thereafter, the United Kingdom announced a plan in 2014 to create a bank of 100,000 genomes in the nation which was followed by GenomeAsia 100K project announced by the National Technological University (NTU), Singapore.
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## India Elected to UNHRC

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India has been elected to the United Nations Human Rights Council (UNHRC) for a period of three years beginning January 1, 2019.

- The elections for selecting new members to UN Human Rights Council (UNHRC) were held at the United Nations in which the 193-members of the UN General Assembly took part.
- India received 188 votes in the Asia-Pacific category.
- India was vying for a seat in the Asia Pacific category, which has 5 seats in UNHRC. Along with India, Bahrain, Bangladesh, Fiji, and the Philippines were also elected to UNHRC from Asia-Pacific.
- India has previously served in Human Rights Council from 2011-2014 and 2014-2017.

## Significance

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- India's election with the highest number of votes reflects India's standing in the international comity.
- It recognizes India's commitment towards the protection of Human Rights.

## Criticism of Election

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Human Rights NGO, Human Rights Watch has criticized the election saying that the election was devoid of any competition and countries with the worst Human rights records like Philippines, Eritrea, Bahrain etc. have been elected in UNHRC.

## About UNHRC

- The United Nations Human Rights Council (UNHRC) is a United Nations body whose mission is to promote and protect human rights around the world.
- The UNHRC has 47 members elected for staggered three-year terms on a regional group basis from 5 groups.
- To become a member, a country must receive the votes of at least 96 of the 191 states of the UN General Assembly (an absolute majority).
- The members are elected for a period of three years, with a maximum of two consecutive terms.

## Silver Jubilee of National Human Rights Council (NHRC)

- India's top human rights body, NHRC has completed 25 years of its formation.
  - The National Human Rights Commission (NHRC) of India was established on 12 October 1993.
  - It is a statutory body established under the Protection of Human Rights Act (PHRA), 1993.
  - It is based on the Paris Principles, adopted at the first international workshop on national institutions for the promotion and protection of human rights held in Paris in October 1991.
  - The NHRC is an embodiment of India's concern for the promotion and protection of human rights.
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## Ministry's Report on Road Accidents in India

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The Ministry of Road Transport and Highways released The Road Accidents in India report for 2017.

### Findings of the report

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- The year 2017 saw 4.65 lakh road accidents that killed 1.48 lakh and injured 4.71 lakh people.
- Major reasons for Deaths in Road Accident:
  - overspeeding (~66%)
  - Use of mobile phones (~2%)
  - driving on the wrong side (~6%)
  - drunken driving (~3%)
- The road accidents in the country fell by around 3% as compared to 2016.
- Tamilnadu reported the highest number of accidents, around 75000 in one year, followed by Madhya Pradesh (~57000) and Karnataka(~52000).
- More number of accidents were recorded in the Southern States, more deaths were recorded in the Northern States.
- Young adults in the age group of 18 - 45 years accounted for around 72% of victims during 2017.
- People in the working age group of 18- 60 years accounted for a share of around 87% in the total road accident fatalities.
- In terms of accidents on road categories, the National Highways accounted for 30% of total road accidents and 36% of deaths in 2017.

### **Justice K.S. RadhaKrishnan Committee**

- Supreme Court had set up the three-member KS Radhakrishnan panel on road safety in April 2014. The SC had termed the roads in India as "giant killers"

- The main recommendations of the committee were:
  - Ban on the sale of alcohol on highways (both state and national) to restrain drunk driving.
  - The states were directed to implement laws on wearing helmets.
  - Audit of road safety to be implemented by states to ensure the safety standards in the design, construction, and maintenance of roads.
  - The committee stressed on the importance of creating awareness among people on road safety rules.

### **Motor Vehicles (Amendment) Bill, 2016**

- It proposes to create a National Register for Driving Licence and a National Register for Vehicle registration through “Vahan” and “Sarathi” web portals. This is in order to smoothen the process of registration and licensing.
- It proposes alterations in vehicles, in order to make them suitable for specially-abled people.
- It provides for a Motor Vehicle Accident Fund, which would provide compulsory insurance cover to all road users in India for certain types of accidents.
- It provides for a National Road Safety Board, to be created by the Central Government through a notification. The Board will provide advice to the Central and State Governments on all aspects of road safety and traffic management.
- Contractors, consultants, and civic agencies will be accountable for faulty design, construction or poor maintenance of roads leading to accidents. Those found guilty would be penalized up to Rs 1 lakh.

### **Brasilia Declaration on Road Safety**

- The declaration was signed at the Second Global High-Level conference on Road Safety held in Brazil in 2015.
- Through the Brasilia Declaration Countries plan to achieve the Sustainable Development Goal 3.6 which aims to halve the number of global deaths and injuries from road traffic accidents by 2020.
- The main points of the Brasilia Declaration are:
  - Countries should form transport policies in order to favor more sustainable modes of transport such as walking, cycling and using public transport.
  - It highlights strategies to ensure the safety of all road users
    - by improving laws and enforcement
    - making roads safer through infrastructural modifications
    - ensuring that vehicles are equipped with life-saving technologies
    - enhancing emergency trauma care systems

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## Sikkim Won UN-backed Award

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- India's first fully organic state, Sikkim, won Future Policy Award 2018.
- Sikkim's policies of green agriculture have helped more than 66,000 farmers, boosted tourism and has set an example for others to follow.
- Sikkim was declared fully organic in 2016 after phasing out chemical fertilizers and pesticides and substituting them with sustainable alternatives.
- This year's award was for agroecology. This award has previously honored policies combating desertification, violence against women and girls, nuclear weapons and pollution of the oceans.
- **Agroecology is an integrated approach that simultaneously applies ecological and social concepts and principles to the design and management of food and agricultural systems.**
- It seeks to optimize the interactions between plants, animals, humans and the environment while taking into consideration the social aspects that need to be addressed for a sustainable and fair food system.
- The Future Policy Award 2018 is convened by the Food Agriculture Organization, the World Future Council, IFOAM-Organics International with the support of Green Cross International, DO-IT - Dutch Organic International Trade and Sekem Group (Egypt).

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## Kaziranga National Park

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- Kaziranga National park (KNP) reopens for tourists after a gap of around six months.
- KNP, formed in 1908 is located in the edge of the Eastern Himalayan biodiversity hotspots - Golaghat and Nagaon district.
- In the year 1985, the park was declared as a World Heritage Site by UNESCO.
- It was declared as Tiger Reserve in 2006.
- Also, the park is recognized as an Important Bird Area by BirdLife International. It is home to the world's largest population of Indian Rhinoceros.
- The park area is circumscribed by the Brahmaputra River, which forms the northern and eastern boundaries, and the Mora Diphlu, which forms the southern boundary. Other notable rivers within the park are the Diphlu and Mora Dhansiri.

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## Baavan Buti

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The Baavan Buti is a weaving technique from Nalanda, Bihar. It draws its name from 52 (baavan) motifs used in the handloom.

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## Sujini Embroidery

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- Sujini, an embroidery technique from Bihar, is used to make blankets or bed-spread.

- Sujini was given protection under GI registration tag in 2006.

## Sabai Weaving

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Odisha's Mayurbhanj district is home to Sabai grass (*Eulaliopsis binata*) that has been used in making ropes and other products for centuries.

## Atal Innovation Mission & SIRIUS Educational Foundation

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- To promote innovative cooperation between students of India and Russia, a Memorandum of Understanding was exchanged between India's Atal Innovation Mission (AIM) and the Russian Federation's SIRIUS Educational Foundation.
- The MoU plans to:
  - Remove cultural and language barriers between students of Russia and India.
  - Share the best practices in the promotion of educational, scientific, innovative achievements, promote innovative cooperation.
  - Search and develop talented youth of both countries fostering a knowledge driven innovation ecosystem in both the countries.

### **Atal Innovation Mission**

- Atal Innovation Mission (AIM) is NITI Aayog's flagship initiative to promote a culture of innovation and entrepreneurship in India.
- AIM has been established to create and promote an ecosystem of innovation and entrepreneurship in a holistic manner through various initiatives at school, university and industry levels.
- AIM also serves as a platform for promotion of world-class Innovation Hubs, Grand Challenges, Start-up businesses and other self-employment activities in India, leveraging state of the art, advanced and affordable emerging technologies.
- The Atal Innovation Mission has thus two core functions:
  - Innovation promotion: to provide a platform where innovative ideas are generated.
  - Entrepreneurship promotion: Wherein innovators would be supported and mentored to become successful entrepreneurs at Incubation Centres.

### **SIRIUS Educational Foundation**

- SIRIUS Educational Foundation has been founded by "Talent and success" Foundation and Government of Russia.
- Fund "Talent and success" is a unitary, non-profit, non-standard educational organization in Russia .
- The activities of the Foundation are aimed to identify and support children and young people who have shown outstanding abilities.