News Analysis (16 Jul, 2019)

National Digital Health Blueprint

The Union Minister of Health and Family Welfare has released the National Digital Health Blueprint (NDHB) report in the public domain for inputs from various stakeholders.

- **Citizen centricity, quality of care, better access, universal health coverage, and inclusiveness** are some of the key principles of a robust healthcare system.
- All these aspirations can be realized principally by <u>leveraging the power of the digital technologies</u>.
- In the context of India, with its size and diversity, this mammoth task requires that a **holistic, comprehensive and interoperable digital architecture** is crafted and adopted by all the stakeholders, and therefore the need of a blueprint.

Recommendations

- A new entity, **National Digital Health Mission (NDHM)**, is recommended to be established as a purely **government organization** with complete functional autonomy on the lines of <u>Unique Identification Authority of India (UIDAI)</u> and <u>Goods and Services Network GSTN</u>.
- The Objectives of NDHB are aligned to the Vision of National Health Policy 2017 and the <u>Sustainable Development Goals (SDGs)</u> relating to the health sector. These include:
  - Establishing and managing the **core digital health data and the infrastructure** required for its seamless exchange.
  - Promoting the adoption of **open standards by all the actors in the National Digital Health Ecosystem (NDHE),** for developing several digital health systems that span across the sector from wellness to disease management.
  - Creating a system of **Personal Health Records**, based on international standards, and easily accessible to the citizens and to the service providers, based on citizen-consent.

- Following the **best principles of cooperative federalism** while working with the States and Union Territories for the realization of the Vision.
- Promoting **Health Data Analytics** and **Medical Research**.
- Enhancing the **efficiency and effectiveness of Governance** at all levels.
- Ensuring **Quality** of Healthcare.
- Leveraging the **Information Systems already existing** in the health sector

- While the Blueprint has **identified 23 Building Blocks**, a few of the **critical capabilities** of NDHE are:
  - **Identification:** The Blueprint handles the requirements of Unique identification of **Persons, Facilities, Diseases and Devices through 2 Building Blocks, namely, Personal Health Identifier (PHI), and Health Master Directories & Registries**.
    - This can be achieved through a combination of **Aadhaar-based Identification/ Authentication** and **through other specified types** of identifiers.
  - **Citizen to be in Control:** The Blueprint achieves the complex and mandatory requirements of maintaining the confidentiality, security, and privacy of health records through **Consent Manager, Anonymizer and Privacy Operations Centre**.
  - **Service Access/ Delivery:** Access and delivery to be implemented by a combination of **Web (India Health Portal), Mobile (MyHealth App) and Call Centres besides Social Media Platforms**.
    - The Command, Control and Communication Centre enable real-time monitoring and real-time interventions needed in the NDHE.
    - Given the significant spread of smartphones and the prospects of its further growth, The Blueprint **emphasizes the 'Mobile First' principle** for the majority of stakeholder-facing services.
  - **Interoperability:** The Health Information Exchange and the National Health Informatics Standards enable and promote the interoperability of various building blocks.

It can be noted that recently, as part of the high-level summit, the **Delhi Declaration on digital health for sustainable development** was adopted at the concluding session of the **'4th Global Digital Health Partnership Summit'**.

Global Digital Health Partnership Summit

- The **'4th Global Digital Health Partnership Summit'** was held in **February, 2019 in New Delhi**
- It was hosted by the Ministry of Health and Family Welfare in collaboration with **World Health Organization (WHO)** and the **Global Digital Health Partnership (GDHP).**

Global Digital Health Partnership

- The **Global Digital Health Partnership (GDHP)** is an international collaboration of governments, government agencies and multinational organisations dedicated to improving the health and well-being of their citizens through the best use of evidence-based digital technologies.
- It was **established in February 2018,** to provide an opportunity for transformational engagement between its participants.
- **Australia** was the host country for the **inaugural summit in 2018.**

World Health Organisation

- The **World Health Organisation (WHO)** is a **specialized agency** of the <u>United Nations</u> that is concerned with international public health.
- It is **headquartered in Geneva, Switzerland.**
- The WHO's constitution came into force on April 7, 1948 – a date now celebrated every year as **World Health Day**.
- The **World Health Assembly** is the supreme decision-making body in WHO. The assembly meets annually and is attended by delegations from 194 member states.

Indian Tigers under Stress due to Tourism

A recent study conducted by the **Centre for Cellular and Molecular Biology (CCMB)'s Laboratory for Conservation of Endangered Species (LaCONES)** has revealed that **tourism induces stress in Tigers.**

- The study examined the relationship between **anthropogenic disturbance (pollution due to human activity)** and physiological stress levels among tiger populations of **Bandhavgarh Tiger Reserve (BTR)** and **Kanha Tiger Reserve (KTR) in Madhya Pradesh.**
- Researchers assessed concentrations of **fecal Glucocorticoid Metabolite (fGCM)** – a **marker of stress** in individual tigers.
    - Chronically **elevated fGCM levels can negatively impact** growth, reproductive success, immunity and cause muscular atrophy. Muscle atrophy is defined as a decrease in the mass of the muscle, which can be a partial or complete wasting away of muscle.
- They collected fecal samples from both the reserves during tourism and non-tourism periods and data on various anthropogenic disturbances, including tourism activities such as the number of vehicles and visitors.
    - It found significantly higher fGCM concentrations in tigers at both the reserves during tourism period compared to the non-tourism period.
- **Females** are known to **undergo more stress,** but this study shows that males were

also under tremendous stress.

- Previous studies had shown that newly-introduced tigers in Sariska Tiger Reserve, Rajasthan, had **failed to reproduce effectively,** presumably due to high levels of stress caused by high anthropogenic disturbance.

Recommendations

- Strict regulation of vehicular traffic,
- Sustainable tourism practices,
- Shifting of artificial waterholes away from tourist roads,
- Reducing other anthropogenic disturbances, including the relocation of villages from the core area of tiger reserves.

Laboratory for the Conservation of Endangered Species

- The **Laboratory for the Conservation of Endangered Species (LaCONES**) is a dedicated facility of **CSIR's Centre for Cellular and Molecular Biology (CCMB) in Hyderabad** that uses modern biotechnologies for conservation of endangered wildlife.
- Project LaCONES was started in 1998, while the laboratory was established in 2007.
- It has **twin objectives:**
  - Conservation measures through **in situ habitat preservation, and species protection.**
  - **Ex situ conservation** (captive breeding in controlled environment to restock original wild populations).
- LaCONES is the only laboratory in India that has developed methods for collection and cryopreservation of semen and oocytes from wildlife.
- **Few achievements:**
  - It has established the **Genetic Resource Bank for Indian wildlife.**
  - Produced **'Spotty', a spotted deer fawn** and **"blacky" a black buck calf using artificial insemination.**

Centre for Cellular & Molecular Biology

- The **Centre for Cellular & Molecular Biology (CCMB)** is a premier research organization which conducts high quality basic research and training in frontier areas of modern biology, and promote centralized national facilities for new and modern techniques in the interdisciplinary areas of biology.
- It was set up initially as a **semi-autonomous Centre on April 1, 1977** with the Biochemistry Division of the then Regional Research Laboratory (presently, Indian Institute of Chemical Technology, IICT) **Hyderabad.**
- During 1981-82, the CCMB was accorded the status of a full-fledged national

laboratory with its own Executive Committee and Scientific Advisory Council.
- It is **located in Hyderabad** and operates under the **aegis of the <u>Council of Scientific and Industrial Research</u>.**
- It is designated as **"Center of Excellence"** by the **Global Molecular and Cell Biology Network, UNESCO.**

Bio-Capsules for Plants

Recently, ICAR (Indian Council of Agricultural Research) scientists have developed the technology to pack bio-fertilizers in tiny capsules. This eliminates the need for farmers to carry the sacks of biofertilizers.

- It is being called the **one-gram capsule, which have many advantages**:
  - One-gram capsules are very efficient as it contains the microbial population equivalent to what is present in a one-kg pack of powder-based biofertilizer or a one-litre bottle.
  - Also, as these microbial strains are retained in the dormant stage, there is no issue of their viable loss in room temperatures as is the case with many liquid-based bio formulations.
- Currently, various forms of Plant Growth-Promoting Biofertilizers like rhizobacteria (PGPR) formulations are sold commercially. While some are powder-based formulations, others are liquid-based.
- Biofertilizers have become popular in the last few years with organic farming becoming increasingly popular.

Biofertilizer

- It consists of a carrier medium rich in live microorganisms. When applied to seed, soil or living plants, it increases soil nutrients or makes them biologically available.
- Biofertilizers contain different types of fungi, root bacteria or other microorganisms. They form a mutually beneficial or symbiotic relationship with host plants as they grow in the soil.
- **Advantages of Biofertilizer**
  - Increase the nitrogen and phosphorus available to plants more naturally than other fertilizers.
  - They are simple to use, even for novice small growers.
  - They do not pollute the soil or the environment, whereas chemical fertilizers often result in too much phosphate and nitrogen in the soil.
  - They are a cheap, easy-to-use alternative to manufactured petrochemical products.
  - They restore normal fertility to the soil and make it biologically alive. They boost the amount of organic matter and improve soil texture and structure.

- They increase yield by up to 30 per cent because of the nitrogen and phosphorus they add to the soil.
    - The improvement in soil texture and quality helps plants grow better during periods of drought.
    - Biofertilizers help plants develop stronger root systems and grow better.
    - Biofertilizers also reduce the effects of harmful organisms in the soil, such as fungi and nematodes. Plants resist stress better and live longer.
- **Disadvantages of Biofertilizer**
    - Biofertilizers require special care for long-term storage because they are alive. They must be used before their expiration date.
    - If other microorganisms contaminate the carrier medium or if growers use the wrong strain, they are not as effective.
    - The soil must contain adequate nutrients for biofertilizer organisms to thrive and work.
    - They complement other fertilizers, but they cannot totally replace them.
    - They lose their effectiveness if the soil is too hot or dry.
    - Excessively acidic or alkaline soils also hamper successful growth of the beneficial microorganisms; moreover, they are less effective if the soil contains an excess of their natural microbiological enemies.
    - Shortages of particular strains of microorganisms or of the best growing medium reduce the availability of some biofertilizers.

Rotavirus Vaccination Drive

The government of India is set to launch a rotavirus vaccine drive across **all states and Union territories** by September 2019.

- The vaccine is currently being administered in Himachal Pradesh, Haryana, Odisha, Andhra Pradesh, Assam, Tripura, Rajasthan, Madhya Pradesh, and Tamil Nadu.
- The Rotavac has been introduced in India's Universal Immunisation Programme (UIP) including Inactivated Polio Vaccine (IPV), Measles, Rubella (MR) vaccine, Adult Japanese Encephalitis (JE) vaccine, Tuberculosis, Diphtheria, Pertussis, Hepatitis B, Pneumonia and Meningitis due to Haemophilus Influenzae type b (Hib).

Rotavirus

- Rotavirus can cause diarrohea, which can lead to dehydration (not having enough water in the body).
- Rotavirus is a **contagious disease** that spreads easily from child to child.
- Rotavirus spreads when a person comes in contact with the **feces** of someone who has rotavirus and then touches their own mouth. For example, rotavirus can spread when a child with rotavirus doesn't wash their hands properly after going to the bathroom and then touches food or other objects.
- **Symptoms**
  - Severe diarrhea
  - Throwing up
  - Dehydration
  - Fever
  - Stomach pain
- World Health Organisation (WHO) recommends that the **first dose** of rotavirus vaccine be administered as soon as possible **after 6 weeks of age**, along with DTP vaccination (diptheria, tetanus and pertussis).
- WHO has recommended the inclusion of rotavirus vaccine in the **National Schedules** of the countries where under five mortality due to diarrhoeal diseases is more than 10%.
- Currently, two vaccines are available against rotavirus:
  - **Rotarix** (GlaxoSmithKline): is a **monovalent vaccine recommended** to be orally

administered in two doses at 6-12 weeks.

- **Rota Teq** (Merck) is a **pentavalent vaccine** recommended to be orally administered in three doses starting at 6-12 weeks of age.

Monovalent vaccine and Pentavalent vaccine

- Monovalent vaccines are designed to immunize against a **single antigen** or **single microorganism**.
- **Pentavalent vaccine** provides protection to a child from five life-threatening diseases – **Diphtheria, Pertussis, Tetanus, Hepatitis B and Haemophilus Influenzae type b (Hib)**.

World Youth Skills Day

On the World Youth Skills Day, the Ministry of Skill Development and Entrepreneurship (MSDE) celebrated the fourth anniversary of the Skill India Mission.

- During the celebration, team for **World Skills International Competition**, to be held from 22th-28th August, 2019 in Kazan, Russia, was announced.
- **A Degree Apprenticeship Program** that will have apprenticeship/on-the-job training embedded in a 3 or 4 year University degree program, was launched. This program is designed by the MSDE and the Ministry of Human Resource and DEvelopment (MHRD).
- Announcement regarding the establishment of a new Japan India Institute for Manufacturing (JIIM) in Haryana and new courses in (Industrial Training Institutes) ITIs around **training on Electric Vehicles (EVs)**, in line with the government's intention to work for greener energy sources, was also made.

Skill India Mission

Launched in the year 2015, it is an initiative of the Government of India to empower the youth of the country with skill sets which make them more employable and more productive in their work environment.

World Youth Skills Day

- The United Nations, at its General Assembly in November 2014, declared 15 July as World Youth Skills Day (WYSD).
- The aim of WYSD is to advocate for skills as an important factor to improve young people's transitions to decent work, and to highlight the crucial role of skilled youth in addressing today's most challenging global issues.
- The theme for the year 2019 is **"Learning to learn for life and work"**.

Declining Sex Ratio and Fertility Rates

As per the Sample Registration System (SRS) data from the Registrar General of India, the country's **sex ratio at birth** (SRB) declined to **898** in triennnium (three year period) ending 2017.

- The **fertility rate reduced** from **2.3** in the year 2016 to **2.2** in the year 2017, close to the replacement level of fertility of 2.1.
- This trend is in line with the population projections by the United Nations, which have been revised downward in recent years. The year in which India will surpass China in population has been extended from 2022 (according to 2015 report) to 2027 (according to the 2019 report).
- This trend also indicates that Indians want **less children** now but want them as sons. The Economic Survey 2017-18 underlined the meta preference towards son in detail.
- It is Telangana, Delhi, Kerala along with Bihar, that have shown the sharpest worsening in sex ratio at birth in recent years.
- Though use of sex-selection techniques is the biggest cause, social norms that prefer male children is a reason behind poor sex ratio in states like Bihar whereas in urbanised states, the richer households prefer more sons due to flawed social and economic reasons.

Note: The SRS data also demonstrated that the proportion of economically active population (15-59) as well as old age population (60+) in India is rising. While the former constitutes 65.4 % of the populace, the latter was at 8.2 % in 2017.

The Sample Registration System

- The Office of Registrar General (under the Ministry of Home Affairs) initiated the scheme of sample registration of births and deaths in India popularly known as Sample Registration System (SRS) in **1964-65** on a pilot basis and on full scale from 1969-70. The SRS since then has been providing data on a regular basis.
- The SRS in India is based on a **dual record system**. The field investigation under Sample Registration System consists of continuous enumeration of births and deaths in a sample of villages/urban blocks by a resident part-time enumerator, and an independent six monthly retrospective survey by a full-time supervisor. The data obtained through these two sources are matched. The unmatched and partially matched events are re-verified in the field to get an unduplicated count of correct events.
- The **revision of SRS sampling** frame is undertaken every ten years based on the results of the latest Census.

Subansiri Dam

Despite National Green Tribunal's order of not resuming construction or concretization work at Lower Subansiri Hydroelectric Project (LSHP) till safety issues are resolved, massive concretization has been carried out at the Subansiri hydroelectric project.

- **Subansiri Lower Hydroelectric Project** (SLHEP), is an under-construction **gravity dam** on the **Subansiri river** along the border of Assam and Arunachal Pradesh.
  - **Subansiri River (gold river),** originates in the Tibet Plateau and enters India through Miri hills in Arunachal Pradesh.
  - It is the **largest tributary** of Brahmaputra River.
- **Subansiri Lower Hydroelectric Project had been kept pending due to** local agitation over several dam safety and administrative issues involved in the implementation of the project like:
  - SLHEP contravenes the **1980 Brahmaputra Board Act** by transferring the work of Water Resources Department of Subansiri Basin from the Brahmaputra Board to the **public and private sector**.
  - Increased **seismic threat level** to the dam, assessed by Indian Institute of Technology at Roorkee.

Gravity Dam

- **Gravity dam** is constructed from **concrete** or **cement** (unlike mud and masonry stones used in embankment).
- It is designed to hold back water by primarily utilising the weight of the material alone to resist the horizontal pressure of water pushing against it.

Other Controversial Dams

- **Sardar Sarovar Dam:** The Sardar Sarovar Dam is a **gravity dam** (2nd largest concrete gravity dam by volume in the world) on the **Narmada river** near **Navagam**, Gujarat.
  - **Gujarat, Madhya Pradesh, Maharashtra, and Rajasthan**, receive water and

electricity supplied from the dam.
  - Dam is alleged to displace around **2.5 lakh villagers.**
- **MullaPeriyar Dam:** It is a gravity dam on the **Periyar River** in **Idukki district** of **Kerala** but it is owned and operated by the **Tamil Nadu government**.
    - There is an ongoing contention between Kerala and Tamilnadu governments over the height of the dam.
- **Polavaram project:** It is an under-construction multi-purpose National **project** on the **Godavari River** in the West Godavari District and East Godavari District in **Andhra Pradesh**.
   - The project will submerge villages in Chhattisgarh and Odisha.
- **Kishanganga Hydroelectric Plant** is a **run-of-the-river** hydroelectric scheme that is designed to divert water from the Kishanganga River to a power plant in the **Jhelum River basin** and is located in **Jammu and Kashmir**.
    - **World Bank's** court of arbitration failed to resolve the dispute between India and Pakistan over Indus water treaty issue.

Jal Marg Vikas Project

The Jal Marg Vikas Project (JMVP) for **capacity augmentation of navigation** on National Waterway-1 **(NW-1)** is being implemented by the support of World Bank.
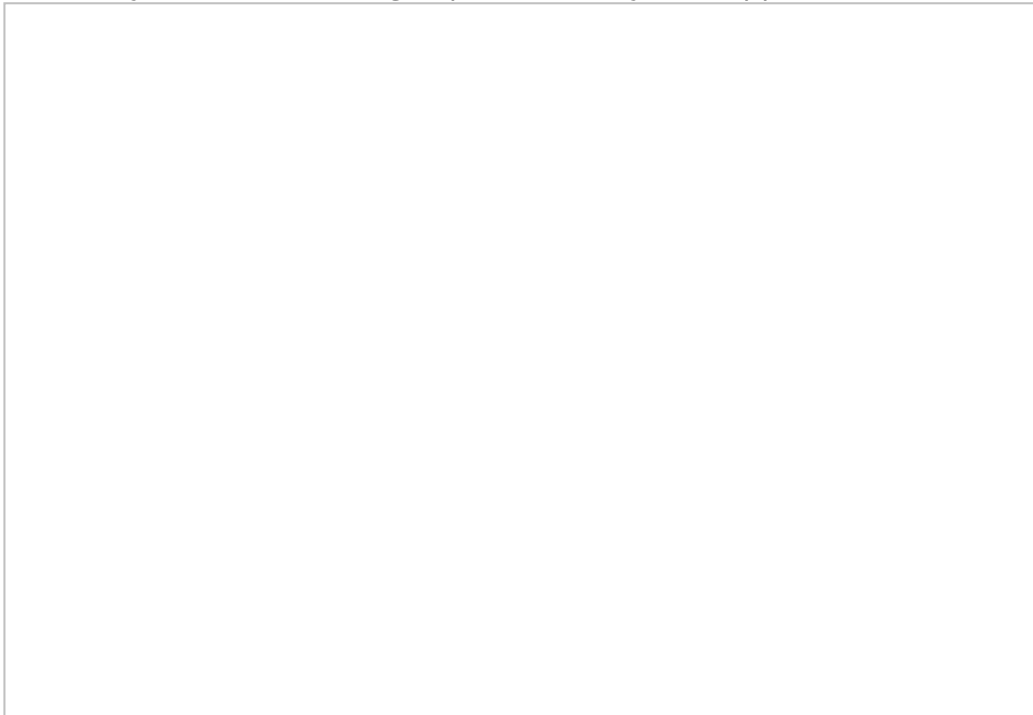
- One of the major problems for a commercially viable and safe navigation on NW-1 is low depth upstream of Farakka barrage due to low discharges from tributaries and difficult hydro morphological characteristics of the river Ganga.
- The project will contribute in **bringing down the logistics cost** in the country and will

provide an alternative mode of transport which will be environment friendly and cost effective.

- It is being implemented by the **Inland Waterways Authority of India** (Ministry of Shipping).
- The project envisages fairway development through performance based contract for least assured depth of 2.2 metres to 3 metres and bottom channel width of 45 metres, bank protection works, and provisions of navigation aids.
- The **states** that are being covered under the Project are Uttar Pradesh, Bihar, Jharkhand, West Bengal.
- The Project is expected to be completed by **March, 2023**.

Common Lineblue and Dark Cerulean

Rare butterfly species Common Lineblue, (which was last seen in 1962 in Delhi) and **Dark Cerulean** (which was last spotted in the **late 90s**) were spotted by researchers in **2018** after a gap of over half a century.

- Both Common Lineblue and Dark Cerulean butterflies are usually found in the **Himalayan foothills**.
- **Researchers** and **lepidopterologists** (branch of entomology concerning the scientific study of moths and the three superfamilies of butterflies) have noted that resurfacing of the two rare species of butterflies in the Delhi points towards the **expanding floral diversity** of the region that attracts new butterfly species from adjoining places.

Apollo 11: 50 Years

The year 2019 marked the 50th anniversary of Apollo 11.It was the first manned mission to land on the Moon.

- On July 20, 1969, American astronauts Neil Armstrong and Edwin "Buzz" Aldrin became the first humans ever to land on the moon.
- As Neil Armstrong set took his first step on the moon, he famously said, **"That's one**

small step for man, one giant leap for mankind."

- The Apollo program was designed to land humans on the Moon and bring them safely back to Earth.
- There were five more successful lunar landing missions, and one unplanned lunar swing-by, Apollo 13 (whose lunar landing was aborted due to technical difficulties) under Apollo missions.
- The last men to walk on the moon were astronauts Eugene Cernan and Harrison Schmitt of the Apollo 17 mission
- Apollo mission was announced at the time (during the Cold War-era) when the United States was still trailing the Soviet Union in space developments).
    - The race was won by the United States when Apollo 11 from the US landed on the moon in 1969, until Apollo 11 landing on the moon, the Soviet Union had been ahead in every department of the space race.
    - Even the first animal put on the moon was a Russian (a dog named Laika)

First State to have Water Policy

Recently the Meghalaya has approved a draft water policy to address water usages, issues of conservation and protection of water sources in the State.

- Amid the water crisis in the country, the Meghalaya cabinet became the first state to approve a draft water policy to address water issues, conservation, and protection of water sources in the state.
- According to schedule 7 of the constitution, Water is a State subject (Entry 17 in the State List). It brings water including water supplies, irrigation and canals, drainage and embankments, water storage and water power under the state list.
- Recently, the state government has also launched its Jal Shakti mission to address the problems related to water.
- All issues related to the utilization of water and livelihood and how to preserve water bodies have been outlined in this policy including community participation in the implementation of this policy by constituting a water sanitation village council at the village level.
- Although, Meghalaya receives a lot of rainfall but the same water cannot be retained and all of the water reaches Bangladesh in no time.
- Also, it can be noted that Meghalaya is the first state to pass a social audit law.

Blue Flag Certification

Recently, the Union Environment Ministry has selected 12 beaches in India to contend for a 'Blue Flag' certification

- The Blue Flag is one of the world's most recognised voluntary eco-labels awarded to beaches, marinas, and sustainable boating tourism operators.
- In order to qualify for the Blue Flag, a series of stringent environmental, educational, safety, and accessibility criteria must be met and maintained.
- There are nearly 33 criteria that must be met to qualify for a Blue Flag certification, such as the water meets certain quality standards, having waste disposal facilities, being disabled-friendly, have first aid equipment etc.
- The Blue Flag Programme for beaches and marinas is run by the international, non-governmental, non-profit organisation FEE (the Foundation for Environmental Education).
- FEE (the Foundation for Environmental Education) was established in France in 1985 and got extended to areas outside Europe since 2001
- Spain tops the list with 566 such beaches; Greece and France follow with 515 and 395, respectively.
- To help Indian beaches meet these criteria, the Ministry has allowed structures such container toilet blocks, change rooms, shower panels, mini greywater treatment plants in an enclosed structure, mini solid waste recycling plants and off-grid solar photovoltaic panels, provided they are a minimum 10 metres from the high tide line.