

# Abhimanu

Weekly current affairs Series

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**Week: I, October 2018**

**Abhimanu's IAS Study Group**  
Chandigarh

## NATIONAL ECONOMIC AFFAIRS

### Crop damages in animal attacks put under PMFBY

- Union Government has decided to cover damages to crops in wild animal attacks under Pradhan Mantri Fasal Bima Yojna in select districts on an experimental basis.
- In this regard, Government has amended provisions of crop insurance scheme in consultation with various stakeholders after review of its working for the last two years. The amended provisions of the scheme have been implemented from October 2018.

#### As per the new provisions:

- Certain horticultural crops have been brought under ambit of PMFBY on experimental basis.
- Damages due to individual fields due to incidents of localised disasters like water logging, land slide, cloud bursts, hailstorms and fire too are brought under scheme.
- Henceforth, insurance firms will also have to spend 0.5% of their earnings from annual premium to advertise provisions of the scheme.
- Fines in cases of delay in clearing insurance claims for crop damages have been proposed.
- In case firm delays insurance clearances beyond two months, it will have to pay an annual interest of 12%. Similarly State government too will have to pay interest of 12% in case of delay in release of state's share of subsidy in premium to insurance firms.

#### About PMFBY:

- The PMFBY, launched in April 2016, compensates farmers for any losses in crop yield. In the event of a crop loss, the farmer will be paid based on the difference between the threshold yield and actual yield.
- The threshold yield is calculated based on average yield for the last seven years and the extent of compensation is set according to the degree of risk for the notified crop. The scheme is compulsory for farmers who have availed of institutional loans.
- The scheme insures farmers against a wide range of external risks — droughts, dry spells, floods, inundation, pests and diseases, landslides, natural fire and lightning, hailstorms, cyclones, typhoons, tempests, hurricanes and tornadoes. The scheme also covers post-harvest losses up to a period of 14 days.

### United States-Mexico-Canada Agreement (USMCA)

- Canada has agreed to sign a trade deal with the United States and Mexico, revamping the North American Free Trade Agreement after almost a year of negotiations. The new deal has been named the United States-Mexico-Canada Agreement (USMCA).
- The trilateral pact is expected to be signed by the three North American countries before the end of November, after which it would be submitted to Congress.

#### About USMCA:

- This part of the deal allows for independent panels to resolve trade disputes that arise out of the deal. It was a red line for Canada, which feared not having an objective arbiter, despite the U.S.'s push for changes.
- Under the USMCA trade deal, online cross-border shipments to Canada worth less than \$150 will no longer be subject to duties. The deal raises the minimum purchase price that qualifies for duties and taxes, known as the de minimis threshold, up from \$20 to \$40.

- The new deal also has new measures the government says will help Canada's natural resources sector; as well as a new environment chapter with measures related to air quality and marine pollution.
- The deal includes stronger rules of origin for autos, and an "ambitious" slate of other provisions related to the digital age.
- It includes a termination provision aimed at preventing the deal from becoming outdated. It states that the deal is good for 16 years after it comes into force, but within the first six years a mandatory "joint review" will be conducted to determine whether all three countries want to extend the agreement for another 16 years. It maintains the six month opt-out of the deal notice that existed in NAFTA.
- The investor-state dispute settlement process (ISDS) is also being phased out between Canada and the United States, which Freeland said has cost Canadians millions in legal fees.
- The exchange of steel and aluminum tariffs between Canada and the U.S. remain in place for now, though the federal government is indicating that with the new deal momentum, they're hopeful that the tariffs could be lifted before the deal is signed.

#### **About NAFTA:**

- The North American Free Trade Agreement is a treaty between Canada, Mexico and the United States.
- NAFTA grants the most-favored-nation status to all co-signers. That means countries must give all parties equal treatment. That includes foreign direct investment. They cannot give better treatment to domestic investors than foreign ones. They can't offer a better deal to investors from non-NAFTA countries.
- Governments must also offer federal contracts to businesses in all three NAFTA countries.
- NAFTA eliminates tariffs on imports and exports between the three countries. Tariffs are taxes used to make foreign goods more expensive. NAFTA created specific rules to regulate trade in farm products, automobiles and clothing. These also apply to some services, such as telecommunications and finance.
- Exporters must get Certificates of Origin to waive tariffs. That means the export must originate in the United States, Canada or Mexico. A product made in Peru but shipped from Mexico will still pay a duty when it enters the United States or Canada.
- NAFTA establishes procedures to resolve trade disputes. Chapter 52 protects businesses from unfair practices. The NAFTA Secretariat facilitates an informal resolution between the parties. If this doesn't work, it establishes a panel to review the dispute. That helps all parties to avoid costly lawsuits in local courts. It helps the parties interpret NAFTA's complex rules and procedures. These trade dispute protections apply to investors as well.
- All NAFTA countries must respect patents, trademarks, and copyrights. At the same time, the agreement ensures that these intellectual property rights don't interfere with trade.

## **Government e-Payments Adoption Ranking (GEAR)**

- According to 2018 Government E-Payments Adoption Ranking (GEAR), India ranked 28th among 73 countries up from 36th in 2011, reinforcing the country's progress towards digital transformation.

#### **About GEAR:**

- The 2018 GEAR, an Economist Intelligence Unit (EIU) global Index and benchmarking study commissioned by Visa, ranks governments by quantifying their e-payment capabilities based on various indicators.
- The EIU evaluates the extent to which major countries around the world have adopted e-payment systems, based on the digital platform and according to seven criteria — Citizen-to-Government (C2G), Government-to-Citizen (G2C), Business-to-Government (B2G), Government-to-Business (G2B) transactions, infrastructure, socio-economic and policy environments.

#### **Important highlights:**

- Norway tops the GEAR list scoring 89.7 points in seven categories.
- India leads the B2G category, along with other countries like Australia, Singapore and South Korea. The category evaluates the ease with which businesses can calculate and make their tax payments, register for the first time, as well as renew their registrations online and digitally calculate their pension fund contributions, thereby making those payments on a periodic basis.

- At the same time, by simplifying refund and loan application processes, wherein businesses can track status digitally, coupled with dedicated digital portals to submit proposals for government procurement services, India leads the G2B category as well, along with four other countries.
- The C2G category evaluates the extent to which citizens can complete various transactions electronically by assessing six indicators, including online one-stop shops, income tax payments, and obtaining an ID card. India ranks third in this category, along with four other countries, while France and the UAE top the list.
- The G2C category captures the extent to which various government transfers like tax refunds, pension and welfare benefits and unemployment benefits can be accessed electronically. In India, while everything pertaining to tax filing and pension and welfare benefits has smoothly migrated to digital, the unemployment benefits system continues to be driven by paper processes, as a result of which the country still lags behind, in 25th place.
- The infrastructure and socio-economic categories examine the supportive infrastructure for e-payments and their acceptance in society at large. With respect to infrastructure, while India has witnessed an increase in Internet penetration over recent years, substantial pockets of communities continue to lack reliable access, leaving country ranked 58th.
- In the socio-economic category, India is ranked 60th out of 73 countries, highlighting an urgent need to focus efforts on enhancing educational levels, as well as improving citizens' and businesses' engagement with Internet-enabled services.
- Finally, the policy category assesses the policy environment and examines how it spurs e-payments adoption.
- Though India ranks at a low 40th owing to a few inhibiting policy decisions, the government's efforts to strengthen Intellectual Property Rights (IPR) with an objective to foster innovation and protect country's traditional knowledge could motivate innovation and act as a catalyst businesses to grow. Incentives to consumers and merchants to adopt digital payments are also restricted to selected e-payment methods, potentially limiting the effectiveness of these measures.

## NATIONAL POLITY

### Swachh Survekshan Grameen Awards 2018

- Indian Prime Minister has given awards to top Ranked State, District and State with maximum citizen participation based on the National Swachh Survekshan Grameen 2018 commissioned by Ministry of Drinking Water and Sanitation.

#### Highlights:

- Haryana was ranked as the best State while Satara District of Maharashtra was ranked as the best district as per the ranking undertaken by Swachh Survekshan Grameen 2018.
- Uttar Pradesh was rewarded for maximum citizens' participation.
- The SSG 2018 will assign 65% weightage to findings and outcome and 35% to service level parameters to be obtained from Integrated Management Information System (IMIS) of the MDWS.
- The weights to different elements of SSG are direct observation of sanitation in public places (30%), citizen's feedback on sanitation parameters (35%), service level progress on sanitation progress in the country as per SBMG-MIS (35%).

- The SSG 2018 was conducted by independent survey agency in all districts from 1st to 31st August 2018. It will also take feedback from over 50 lakh citizens on SBM related issues through direct interaction as well as online feedback.

#### **About Swachh Survekshan Grameen:**

- SSG is a rural cleanliness survey to rank all states and districts on basis of qualitative and quantitative evaluation.
- The objective of SSG 2018 is to undertake ranking of states and districts on basis of their performance attained on key quantitative and qualitative Swachh Bharat Mission-Grameen (SBM-G) parameters. The rankings will be based on taking into account set of comprehensive cleanliness parameters.
- The criteria of SSG-2018 include survey of public places, citizens' perspective of cleanliness, their recommendations and data from SBM-G. As part of it, more than 6000 villages in 698 districts across India were covered. It covered nearly 30,000 public places namely schools, anganwadis, public health centres, haat/bazaars/religious places in these villages.

## **Gujarat starts vaccination of Gir lions against deadly virus**

- The Gujarat forest department Sunday started vaccination of lions in the Gir sanctuary to protect them from a deadly virus blamed for the death of some of the big cats in their last abode.
- As many as 23 lions have died in Gujarat's Gir sanctuary in less than a month. Most of them have succumbed to canine distemper virus (CDV) and protozoa infections.
- The Gir sanctuary falls under the Junagadha district forest department's jurisdiction.
- Only those lions which are in the forest department's captivity are being vaccinated at present. Following the death of big cats, the forest department had captured 36 lions and shifted them to Jashadhar and Jamwala rescue centres in the Gir forest as a precautionary measure.
- After the CDV spread was confirmed in Asiatic lions, the state government had urgently imported 300 shots of the vaccine against the virus from the US.

#### **What is Canine Distemper Virus?**

- Canine Distemper Virus (CDV) is a viral disease that infects the gastrointestinal, respiratory, and central nervous systems. Dogs who have not been vaccinated for Canine Distemper are the most at-risk. While the disease can also be contracted when improperly vaccinated or when a dog has high susceptibility to bacterial infection, these cases are rare.
- CDV can be spread through direct contact (licking, breathing air, etc.) or indirect contact (bedding, toys, food bowls, etc.), though it cannot live on surfaces for very long. Inhaling the virus is the primary method of exposure. There is no known cure for CDV.

## **Methanol Cooking Fuel Program of India**

- Namrup-based Assam Petrochemicals Limited (APL) rolled out the country's first methanol-based cooking fuel, which will be 30% cheaper than conventional LPG fuel, cleaner and greener and easily transportable.
- Through the programme, the NITI Aayog has been working on a roadmap to replace 20% of the country's crude imports through methanol alone.
- Adopting methanol will not only mitigate the ever-rising price of fuels, including that of cooking fuel, but will also bring down pollution in the country by over 40%.

#### **About Project:**

- Under the pilot project, stove and methanol canister will be made available in a limited scale. The methanol cooking fuel will be available in canisters of 1.2 kg capacity each, which will be priced at around Rs 32 and around 18 of them would be equivalent to one conventional domestic LPG cylinder.
- The technology for the canister and the special burner has been provided by Sweden. In two months, APL will start commercial production of methanol-based cooking fuel. Initially the product will be made available for the northeastern region.

## Analysis:

- The concept of 'Methanol Economy' is being actively pursued by China, Italy, Sweden, Israel, US, Australia, Japan and many other European nations. As much as 10% of fuel in China's transport sector is based on methanol.
- Methanol is a promising fuel as it is clean, cheaper than fossil fuels and a good substitute for heavy fuels. India imports methanol from Saudi Arabia and Iran at present. Across the world, methanol is emerging as a clean, sustainable transportation fuel of the future.
- Methanol can be used as an energy producing fuel, transportation fuel and cooking fuel, cutting down India's oil import bill by an estimated 20% over the next few years. Unlike CNG, using methanol as a transportation fuel would require minimal alteration in the vehicles.
- Methanol is a clean-burning fuel that produces fewer smog-causing emissions — such as sulphur oxides (SO<sub>x</sub>), nitrogen oxides (NO<sub>x</sub>) and particulate matter — and can improve air quality and related human health issues.

## GI Tag for Alphonso from Konkan

- Alphonso from Ratnagiri, Sindhudurg, Palghar, Thane and Raigad districts of Maharashtra, is registered as Geographical Indication (GI).
- The king of mangoes, Alphonso, better known as 'Hapus' in Maharashtra, is in demand in domestic and international markets not only for its taste but also for pleasant fragrance and vibrant colour. It has long been one of the world's most popular fruit and is exported to various countries including Japan, Korea and Europe. New markets such as USA and Australia have recently opened up.

### About Geographical indicators:

- GI (Geographical Indications) are signs used on goods that have a specific geographical origin and possess qualities or a reputation that are due to that place of origin.
- Agricultural products typically have qualities that derive from their place of production and are influenced by specific local factors, such as climate and soil. They may also highlight specific qualities of a product, which are due to human factors that can be found in the place of origin of the products, such as specific manufacturing skills and traditions.
- A geographical indication points to a specific place or region of production that determines the characteristic qualities of the product that originates therein. It is important that the product derives its qualities and reputation from that place.
- Place of origin may be a village or town, a region or a country. It is an exclusive right given to a particular community hence the benefits of its registration are shared by the all members of the community.
- Keeping in view the large diversity of traditional products spread all over the country, the registration under GI will be very important in future growth of the tribes / communities / skilled artisans associated in developing such products.

### World's first Hyperloop passenger capsule unveiled

- Hyperloop Transportation Technologies Inc. has unveiled its first full-scale passenger capsule in Spain.
- The capsule is 105 feet (32 meters) long and weighs 5 tons. Named as the Quintero One, the product is made almost entirely out of composite material.

#### What is hyperloop transportation system?

- The Hyperloop is a concept proposed by billionaire inventor Elon Musk, CEO the aerospace firm SpaceX.
- Musk's Hyperloop consists of two massive tubes. Pods carrying passengers would travel through the tubes at speeds topping out over 700 mph. For propulsion, magnetic accelerators will be planted along the length of the tube, propelling the pods forward. The tubes would house a low pressure environment, surrounding the pod with a cushion of air that permits the pod to move safely at such high speeds, like a puck gliding over an air hockey table.
- Musk's design recommends an air compressor on the front of the pod that will move air from the front to the tail, keeping it aloft and preventing pressure building up due to air displacement.

#### Analysis:

- Conventional means of transportation (road, water, air, and rail) tend to be some mix of expensive, slow, and environmentally harmful. Road travel is particularly problematic, given carbon emissions and the fluctuating price of oil. As the environmental dangers of energy consumption continue to worsen, mass transit will be crucial in the years to come.
- Rail travel is relatively energy efficient and offers the most environmentally friendly option, but is too slow and expensive to be massively adopted. At distances less than 900 miles, supersonic travel is unfeasible, as most of the journey would be spent ascending and descending (the slowest parts of a flight.) Given these issues, the Hyperloop aims to make a cost-effective, high speed transportation system for use at moderate distances.
- The Hyperloop tubes would have solar panels installed on the roof, allowing for a clean and self-powering system.
- There are of course some drawbacks in this system. Most notably, moving through a tube at such high speeds precludes large turns or changes in elevation. As a result, the system is optimal for straightforward trips across relatively level terrain.
- Realistically, the most important problem in getting any project off the ground is money. Even if one can produce an impressive blueprint, there are still issues of public approval, legislation, regulations, and contractors to worry about.

### Strategic Policy Group to assist National Security Council

- The central government has set up the Strategic Policy Group (SPG) headed by National Security Advisor Ajit Doval to assist the National Security Council, which advises Prime Minister Narendra Modi on matters of national security and strategic interests.
- Other members of the SPG will include NITI Aayog vice chairman, a cabinet secretary, chiefs of the three defence services, RBI governor, a foreign secretary, a home secretary, a finance secretary and a defence secretary.
- The secretary of the Department of Defence Production and Supplies, scientific adviser to the defence minister and secretary (R) will also be members of the panel.
- The government has set up Strategic Policy Group or SPG to help the National Security Council, which advises the Prime Minister on matters of national security and strategic interests.

#### About National Security Council:

- The NSC was established by Prime Minister V.P. Singh on August 24, 1990.

- The prime minister, home minister, defence minister and finance minister are its permanent members.
- The first meeting took place on October 5, 1990 but the later political development rendered it dysfunctional.
- Prime Minister A.B. Bajpai revived it on the recommendations of K.C. Pant Committee. This time it became an extended council with three kinds of agencies.
- Headed by the PM, it has a variety of members including cabinet ministers, members Planning Commission, cabinet and senior secretaries and chiefs of staff from the three services. Governor, Reserve Bank of India, scientific adviser to the defence minister and secretary atomic energy department and officials from IB and RAW are associated with it.
- The Advisory Board has representatives from press and NGOs. The post of adviser to NSC is a key post. Much of the work of the council is secret but it helps the cabinet to take policy decisions. The ministry of defence and the joint intelligence service hosts its meetings and keeps the records.

## Countering America's Adversaries Through Sanctions Act (CAATSA)

- India and Russia have concluded the contract for five S-400 'Triumph' missile systems, one of the biggest defence deals in recent times.
- However, the U.S. has warned the deal would invoke sanctions under the Countering America's Adversaries Through Sanctions Act (CAATSA) law.

### What is CAATSA?

- The Act codifies existing U.S. sanctions against Russia. This Act constrains the executive branch's ability to remove any of the sanctions currently in place.
- This act restrict the persons and companies from providing goods or services to designated entities for certain types of oil projects in Russia.
- The Act also requires the President to impose secondary sanctions on any foreign persons who knowingly make a significant investment in special Russian crude oil projects.
- Furthermore, the Act allows the President, in coordination with U.S. allies, to impose sanctions on persons who invest more than a certain amount in the construction of Russian energy export pipelines, goods, services, technology, information, or support.
- This act allows the President to impose secondary sanctions on non-U.S. companies that may invest in such projects.
- Furthermore, the Act imposes mandatory sanctions on those who knowingly engage in significant activities undermining cybersecurity against any person or government on behalf of Russia.
- This act imposes additional mandatory sanctions against Iran in response to its ballistic missile program, and terrorism-related sanctions against the Iranian Revolutionary Guard Corps (IRGC) and other Iranian sponsors of terrorism. Blocking sanctions can be imposed on persons responsible for human rights abuses, at the discretion of the President, and blocking sanctions will be implemented against Iranian persons who violate the arms embargo against Iran.
- The Act also requires the President to impose sanctions on purchasing certain metals or minerals from North Korea and providing financial services to the North Korean government.

### Analysis:

- CAATSA is unlikely to be imposed on India anytime soon. As a sovereign country, India cannot be dictated to go slow or suspend its existing or future defence cooperation with Russia.
- It is also practically impossible for India to ignore Russia in view of the latter's importance in meeting some of the critical defence hardware requirements of the Indian armed forces and also because of the overwhelming share of Russian weaponry in the Indian arms inventory, the upkeep of which necessitates New Delhi's continued dependence on Moscow for the foreseeable future.
- At the same time, India also needs to be prepared for any eventual CAATSA-related sanctions, which, though unlikely in the immediate future, may surface in the long run.



- India may safeguard its interests by expanding the scope of its existing guidelines for penalties in business dealings to include a provision for banning defence companies of countries which resort to banning entities of other countries for foreign policy purposes.

## **IORA- Delhi declaration**

- 21 countries in the Indian Ocean Rim Association (IORA) recently adopted the Delhi Declaration on Renewable Energy in the Indian Ocean Region. The declaration was the outcome of the 2nd IORA Renewable Energy Ministerial Meeting.

### **The Delhi declaration on Renewable Energy in the Indian Ocean Region:**

- The Delhi Declaration on Renewable Energy in the Indian Ocean Region calls for collaboration among IORA member states in meeting the growing demand for renewable energy in the Indian Ocean littorals, development of a common renewable energy agenda for the Indian Ocean region and promote regional capacity building.
- The declaration also calls for promotion of technology development and transfer, strengthening of public private partnerships in renewable energy and collaboration among IORA member states and the member nations of the International Solar Alliance (ISA). IORA member countries also resolved to collaborate with the International Renewable Energy Agency (IRENA).
- As per the declaration adopted, IORA member nations will collaborate with the ISA member nations to exchange knowledge and share views and potential interests in the renewable energy sector.
- Additionally, IORA member nations and IRENA will undertake the expansion of the Global Renewable Energy Atlas, the world's largest-ever joint renewable resource data project, coordinated by IRENA, thereby creating the Indian Ocean region's first and most comprehensive map and database which can then be used to tap the sizable renewable energy potential of the region; and to collaborate on opportunities available under the International Renewable Energy Learning Platform (IRELP).

### **About IORA:**

- The Indian Ocean Rim Association was set up with the objective of strengthening regional cooperation and sustainable development within the Indian Ocean Region with 21 Member States and 7 Dialogue Partners.
- The IORA is a regional forum, tripartite in nature, bringing together representatives of Government, Business and Academia, for promoting co-operation and closer interaction among them.
- It is based on the principles of Open Regionalism for strengthening Economic Cooperation particularly on Trade Facilitation and Investment, Promotion as well as Social Development of the region.
- India, Australia, Iran IR, Indonesia Thailand, Malaysia, South Africa, Mozambique, Kenya, Sri Lanka, Tanzania, Bangladesh, Singapore, Mauritius, Madagascar, UAE, Yemen, Seychelles, Somalia, Comoros and Oman are members of IORA.

## **IBSAMAR-VI**

- 6th edition of IBSAMAR, a joint Multi – National Maritime Exercise between the Indian, Brazilian and South African Navies, is being held at Simons Town, South Africa from Oct 1-13.
- The exercise includes both harbour and sea phases with various navigation and seamanship evolutions, surface weapons firing, force protection exercises, antipiracy exercise, anti-air and anti-submarine exercise as well as flying operations. Apart from professional activities, sports and social engagements are also planned.
- The Indian Navy is represented in IBSAMAR VI by Guided Missile Frigate INS Tarkash, Guided Missile Destroyer INS Kolkata, Long Range Maritime Patrol Aircraft P8I, Seaking and Chetak helicopters as well as a MARCOS contingent.
- This exercise was initiated in 2006 is the most visible manifestation of convergence of democratic values, economic interests and maritime cooperation.

### **About IBSA:**

Established in June 2003, IBSA is a coordinating mechanism amongst three emerging countries, three multi ethnic and multicultural democracies, which are determined to:

- contribute to the construction of a new international architecture
- bring their voice together on global issues
- deepen their ties in various areas

IBSA also opens itself to concrete projects of cooperation and partnership with less developed countries.

The establishment of IBSA was formalised by the Brasilia Declaration of 6 June 2003, which mentions India, Brazil and South Africa's democratic credentials, their condition as developing nations and their capacity of acting on a global scale as the main reasons for the three countries to come together. Their status as middle powers, their common need to address social inequalities within their borders and the existence of consolidated industrial areas in the three countries are often mentioned as additional elements that bring convergence among the members of the Forum.

## SCIENCE AFFAIRS

### Nobel Prize in Medicine

- The 2018 Nobel Prize in Physiology or Medicine has been jointly conferred to James P. Allison and Tasuku Honjo “for their discovery of cancer therapy by inhibition of negative immune regulation”.
- **About Discovery:**
- James P. Allison studied a known protein that functions as a brake on the immune system. He realized the potential of releasing the brake and thereby unleashing our immune cells to attack tumors. He then developed this concept into a brand new approach for treating patients.
- In parallel, Tasuku Honjo discovered a protein on immune cells and, after careful exploration of its function, eventually revealed that it also operates as a brake, but with a different mechanism of action. Therapies based on his discovery proved to be strikingly effective in the fight against cancer.
- Allison and Honjo showed how different strategies for inhibiting the brakes on the immune system can be used in the treatment of cancer. The seminal discoveries by the two Laureates constitute a landmark in our fight against cancer.

#### Can our immune defense be engaged for cancer treatment?

- Cancer comprises many different diseases, all characterized by uncontrolled proliferation of abnormal cells with capacity for spread to healthy organs and tissues.
- A number of therapeutic approaches are available for cancer treatment, including surgery, radiation, and other strategies, some of which have been awarded previous Nobel Prizes.
- These include methods for hormone treatment for prostate cancer, chemotherapy and bone marrow transplantation for leukemia. However, advanced cancer remains immensely difficult to treat, and novel therapeutic strategies are desperately needed.

## Scientists develop the first bio-electronic medicine

- Scientists have developed the first bioelectronic medicine -- an implantable, biodegradable wireless device that speeds nerve regeneration and improves the healing of a damaged nerve.
- The device that delivers regular pulses of electricity to damaged peripheral nerves in rats after a surgical repair process, accelerating the regrowth of nerves in their legs and enhancing the ultimate recovery of muscle strength and control.
- The size of a dime and the thickness of a sheet of paper, the wireless device operates for about two weeks before naturally absorbing into the body.

### **About Bioelectronic medicine:**

- The technology, called "bioelectronic medicine," provides therapy and treatment over a clinically relevant period of time and directly at the site where it's needed, thereby reducing side effects or risks associated with conventional, permanent implants.
- These engineered systems provide active, therapeutic function in a programmable, dosed format and then naturally disappear into the body, without a trace.
- This approach to therapy allows one to think about options that go beyond drugs and chemistry.
- While the device has not been tested in humans, the findings offer promise as a future therapeutic option for nerve injury patients.
- For cases requiring surgery, standard practice is to administer some electrical stimulation during the surgery to aid recovery.
- However, until now, doctors have lacked a means to continuously provide that added boost at various time points throughout the recovery and healing process.
- The ability of the device to degrade in the body takes the place of a second surgery to remove a non-biodegradable device, thereby eliminating additional risk to the patient.

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