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TECHNOLOGY IN SPORTS AND LEGISLATIONS RELATED TO IT

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ABSTRACT

Sports in India have been pursued like a religion. Its scenario has changed over the years. The UN has acknowledged sports as a method for promoting health, education and development and so there is a need of proper law framework. This paper talks about how there was negligible adjudication in the field of sports and how there have been advancements in this field. Many laws and legislations have been enacted in this field in India yet there are certain shortcomings in our Indian legal system in this context. This paper also mentions the existence of international bodies and their adjudication process. This paper talks about the use of technology and technological developments in the field of sports. This paper also talks about doping and discusses anti-doping laws and rules. Doping is the use of drugs which enhances the performance of the player. It increases the performer's red blood cells and stamina which increases their capacity and endurance. It also mentions some anti-doping agencies, like WADA, NADA and USADA, their working, rules and regulations. WADA is in charge of updating and publishing the list of prohibited substances. If an athlete has a legitimate medical reason to use one of the banned substances a Therapeutic Use Exemption (TUE) may be granted only after review. It mentions substances prohibited at all times and prohibited in-competition and in particular sports. The purpose of International Standard for Testing and Investigations (ISTI) is to plan for effective testing. This paper talks about sports betting and discusses its good and bad sides. This paper gives us a complete understanding of sports and related matters in today's world.

TECHNOLOGY IN SPORTS AND LEGISLATION RELATED TO IT:

The usage of technology in sports is eminent and proves to be the safest and dependable option for making sportsman aware of its utility and application for the betterment of their respective skills. Some people oppose to the involvement of technology in improving performance of sportsman but in reality it is inevitable. Research and development in the field of sports industry itself creates opportunity for investment and employment. The history of technology in sport is lengthy as well as complicated. It has disrupted careers of many for using it in a feigned way, built success for people using it in benevolent manner. By allowing any of these evolutionary steps it is likely to trigger a debate regarding the importance and limits of progression towards technological development.

The prominent advancements in modern technology have had a significant influence on sports, includes, analyzing performance of sportsman also providing the coaches with an opportunity to greatly improve the standard of feedback to players, athletes, enhance the preciseness of time measurements of performance given by sportsman, enabling referees as well as umpires and sport officials to give better decisions and instructions on violation of the rules, improvements in the design of sport equipment and apparel.

Lastly, accommodating the spectators with better viewpoint of sports performances.

Emerging sporting equipment are currently undergoing research and development to enhance performance of sportsman. Some of them include full body swimwear, made up of polyurethane, made a remarkable impact in the Olympics 2008 but got banned a year later as it was making a difference to performance of sportsman, raving cycles and rowing shells which are made up of lightweight but strong materials that reduce the dragging though the air or water, technology in racing cycles used by sportsman in cycling races like tour de France and many more like it.

In football, for instance, new devices are used for different reasons such as to help referees in decision-making and to quantify the athletes' performance during a game, thus helping the coach to set the training program and the game strategy. One of the most famous and recent technologies introduced in football, is called 'goal line technology'. It is used to determine if a ball has crossed the goal line, in order to support the referee.

Instead, as regards the quantification of the athletes' performance during a football match, different kind of devices have been produced in the last few years
The video camera also became prevalent in the 1980's and moreover, provided coaches with an option to capture and analyze sport performance way better than the earlier used methods. The video camera is perhaps the most important development in field of coaching in the modern phase of sport.Video cameras can be deployed in places such as car races, falling of cricket stumps, goal posts, and even placed on the athlete themselves.

Nowadays electronic timing is controlled by computers is employed to mark the performance timings of sportsman in many sports like swimming, cycling, bobsled, Triathlon and many more. Electronic timing[1] is also used in measuring and recording the athlete's reaction time to the start of gun in case the athlete moves too early which are also the grounds for disqualification.

Hawkeye Technology, a computer system was for the first time used in 2001 for depicting the trajectory of a ball in cricket, has made multitudinous difference to the sport of Cricket. Hawkeye produces almost all kinds of statistical analysis done in cricket such as speed of ball, ball pitch on the wicket and the trajectory of the ball after bouncing off. Hawkeye is now prominently used in Tennis to assist in determining whether a shot falls 'In' or 'Out' category. The analysis of sport performance provided by Hawkeye has been greatly improved the spectator's awareness and involvement.
Wearable devices that are capable of monitoring heart rate have been further integrated with tracking technologies that also includes global positioning system (GPS), gyroscope sensors, which are used in describing the athletes' movement and physical demands of the human body. Therefore, these new technologies can articulate the number of collisions and jumps that might take place during a match.
These data-sets have become increasingly important for coaches, athletic trainers and doctors. In fact, coaches use them to provide better strategies for their team. Knowing exactly where and how their players move on the field, they can choose the best player for

[1] https://www.freelapusa.com/what-is-electronic-timing-really/

each position or change a player according to the opponents' level.

Athletic trainers try to use these data-sets to plan and strategize the training sessions of the athletes during pre and regular season, and develop technologies that can be used by athletes to provide them with measurable training routines, specifically for each athlete. For example, some technologies have been designed in such a way to enhance both the physiological and psychological aspects of the game.

Moreover, athletic trainers, team doctors and coaches can utilize heart rate and sensor data in a way to prevent injuries when players are about to initiate and exceed their physical thresholds..

ACCESSIBILITY:

The equipment employed to perform a sport is considered as a huge factor in determining its success as well as levels of participation. Novel and thought-provoking technology might keep us engaged with a sport. But the main issue that is the cost and accessibility needs to be kept under supervision for it to remain accessible.

If we are making sports equipment and technology deployed in it too exquisite then it is expected that only very few future athletes will participate. If the equipment used is technically inefficient to use then amateur sportsman will have to move onto other resort.

Stand up paddle-boarding[2], for example, is the world's fastest growing water sport.sBut there is no attention made to the body governing it or equipment specification manuals about the length or width of boards. Board width helps in determining how stable the board is when paddled upon and therefore how much skill is required in balancing it, and how the person needs to operate it accordingly. The narrower the board is, the speedier it will move, but it would make it more challenging to use it. Make it wider and raw the sportsman's performance will suffer.

SAFETY:

We have to seriously analyze the impact of technological progress on safety. As we all know that the headgear used in amateur boxing was eventually used to provide extra protection to its athletes. But we also have to think about the unintended consequences. While headgear has obviously minimized the severity of head injuries, it can also provide a boxer with invulnerability. This might be sufficient to explain the reason behind no reduction in the number of recorded head injuries since headgear was introduced.

Ultimately, a balance has to be struck between technologies that facilitate a sport and those that empower it. Empirical science often has to be coupled with philosophical debate. In the case of runners with an amputation, it isn't just about how a prosthetic limb performs. It thereby challenges the approach towards disability and how proximately humans should bespeak with technology.

Technology is there to expedite a sport and also to challenge the bar of our performance. But this has to be mitigated with caution and alertness to ensure that a sport remains fair, safe and handy.

It can be argued that the use of new technologies is changing not only the way of training players and playing their sport, but also the whole experience of living and

[2] The sport of lying, kneeling, or standing on a paddleboard or surfboard and pushing oneself through the water with the help of a paddle or one's hands.

watching sport on TV across the globe.

EVERYTHING ABOUT SPORTS LEGISLATION IN INDIA:

There are no central or state legislations in India to regulate sports. The government set up ministry to regulate different sports events that take place in India. The administration of sports is in the hands of autonomous bodies such as, Sports Authority of India (SAI), Indian Olympic Association (IOA), Hockey India (HI) and Board of Control for Cricket in India (BCCI).

These governing bodies receive government's aid and are also registered under the Societies Registration's Act of 1860.

The following govern the whole of the Sports Law:

- **National Sports Policy, 1984/2001**

This act was laid down to raise the standard of sports which was degrading due to corruption, betting etc. The bill of 1984 was incomplete. Its implementation was not complete, so the bill was revised in 2001.

The guidelines are three-fold:

- Firstly, to earmark the areas of responsibilities which different agencies have to undertake to develop and promote sports.
- Secondly, to lay down the procedure to be followed by the autonomous bodies and federations to make the assistance and aid by the government available.
- Thirdly, identifying the sports federation that is eligible for coverage under these set guidelines.

The government aims to achieve excellence in sports. And it was only after this policy that the lawmakers realized the importance of sports and therefore 'Sports' was included in the Constitution in the State list of the Seventh Schedule.

- **Sports Law and Welfare Association of India:**

It is not for profit organization that works for promotion of ethical sports in India. It provides consultancy services on matters concerning sports, like IP issues in sports, sports policy, sports injuries etc. It provides a legal forum wherein the legal practitioners set rules for ethical sports.

- **Sports Authority of India:**

SAI is an apex National sports body set up by the Ministry of Youth Affairs and Sports in 1984for achieving excellence in sports in India. . It is located across 9 regions at Bangalore, Gandhinagar, Chandigarh, Kolkata, Imphal, Guwahati, Bhopal, Lucknow and Sonepat and two Academic institutions like Netaji Subhash National Institute of Sports (NSNIS), Patiala and Laxmibai National College of Physical Education. It is also engaged in activities like providing coaching and spreading awareness about physical education.

- **The Sports Broadcasting Signals (Mandatory Sharing with Prasar Bharati) Act:**

This act was passed in 2007 to encourage a large audience by providing access to listeners and viewers. It covers all sports events which are of national importance through Prasar Bharti. This act provides that no content owner or holder or TV or radio broadcasting service can carry out a live TV

broadcast of the sports events. For doing this, it has to share its live broadcasting signal simultaneously (except advertisements) with the Prasar Bharati.

- **National Sports Federation:**

It undertakes the task of management, direction, supervision, regulation, promotion, development and sponsorship. They are expected to discharge these responsibilities in adherence with the Olympic Charter or the Charter of the Indian Olympic Association in compliance with Government guidelines applicable to NSFs.

- **SAI:**

The SAI provides support to NSF for the identification, training, and coaching of sportspersons, also to improvise infrastructure, equipment, and such other facilities. It also releases funds to NSFs against proposals approved by the government.

DOPING:

Doping has become a prominent and convoluted issue in the modern sphere of sports, which deserves serious considerations well as attention in every problem arising due to it. As specialists and experts are still trying to find the origin as well as how and why it happens, and how to subsequently stop it.

The reason behind the cases of doping and why it compromises the credibility of performance in sports, the victories of some sportsman is becoming questionable and disputable. Nowadays some sporting disciplines have made it possible in surpassing the human limits as well as the legal limits. Some reasons have been indicted and believed to be acting as a contributor to the use of doping as a prevalent technique like the financial interests, the pressure to get good and better results, and the media influence used in sports competitions.

Nowadays, we all have noticed that sports have ceased to remain just sports. Sports has become part of or we can say has managed to become a whole industry, a business, a political reason for national pride, and these facts can only lead to violation of any rules to win.

The doping phenomenon in sports is becoming a prominent and a complex issue, as are the drugs used under this phenomenon. There is an increased and constant competition among those who try to invent new doping techniques and procedures and sports ethics organizations that are investing in the research and development areas for more methods to detect them. Unfortunately, the former is always a one step ahead.

Improving scientific methods which are used to detect prohibited substances is of course a necessity as well as a challenge. Stricter laws with the involvement of authorities are required to prevent the spreading, marketing and usage of these substances.

Doping techniques were first also used in the Roman Empire, where the racing horses were doped with different blends of substances aimed at increasing their speed and stamina and health. 1928, the International Athletics Federation (IAF) was the first international federation to ban the method called as ‘doping’ in every athletic competitions, 32 years later anti-doping testing method was implemented in the field of sports.

The Olympics considered as grandeur in the field of sports, the first official controls took place at the 1972 Olympic Games in Munich

for conventional substances. Anabolic steroids were one of the first substances to be controlled at the 1976 Olympics that took place in Montreal and as a result number of athletes were disqualified and lost their medals. This event made is necessary for the International Olympic Committee (IOC), which further stated that the results of doping tests are bound to be made public within the competition.

This was the beginning of an open altercation that began in the 1980s between those who were seeking and searching for new doping substances that were till then not mentioned in the anti-doping list and the authorities that were trying to detect these substances.

In modern sports, many athletes have been accused and tested positive with use of forbidden substances, perhaps the most famous case being that of canadian Ben Johnson, the 100 meters runner for the usage of anabolic steroids. It was the first doping scandal in the history of the Olympic Games, which eventually led to Johnson's suspension for two years and then for life, because he occurred to test positive again in 1993.

Currently, violation of the following rules would fall under doping : the use or attempt to use a forbidden substance that is use of substances mentioned under the anti-doping list or a prohibited method, refusal for sampling after receiving an invitation to doping control in accordance with anti-doping rules, avoidance of sampling, falsification or attempt to falsify any part of the doping control, possession of prohibited substances and / or methods, trafficking or attempted trafficking of any prohibited substance and / or methods.

EVERYTHING ABOUT WORLD ANTI-DOPING AGENCY:

The World Anti-Doping Agency (WADA) was established in 1999. It is an international agency composed and funded by governments all over the world. Its activities are scientific research, education, development of anti-doping capacities. Its aim is to create a doping free sports environment. The first world conference took place in Switzerland which resulted in Lausanne Declaration on Doping in Sport. Pursuant to this, WADA was established. There are representatives from public authorities and public movement.

Similarly, NADA conducts these activities in India. It adopts anti-doping policies and rules which conform to the World Anti-Doping Agency. It is formed by the Union Government under the Societies Registered Act. It included scientists and representatives from Indian Olympic Association.

WADA has World Anti-Doping Code which is a core document that harmonizes rules, regulations, policies within sports organization and public authorities. It harmonizes anti-doping efforts worldwide. More than 660 sports organization have accepted this code. They are called the signatories. These organizations include the International Olympic Committee (IOC), the International Paralympics Committee (IPC), all International Federations (IFs) and all IOC-recognized IFs, National Olympic and Paralympics Committees, National Anti-Doping Organizations. These signatories have to undertake 3 steps in order to comply to the code i.e., acceptance, implementation and enforcement. Acceptance means that the signatory agrees to the principles of the code. Then in the implementation process the anti-doping organization amends its rules and regulations so as to incorporate all the

mandatory articles of the code. Enforcement refers to the organization actually enforcing its amended rules in accordance with the code. WADA monitors all of this.

There are certain drugs which enhance the athlete's performance which enables them to perform better than other athletes. It increases the endurance of the athlete by decreasing the sensation of fatigue. The use of such drugs to increase the endurance is considered unethical and therefore it is prohibited. Also these drugs can be life threatening in the long run. It has many side effects on the athletes like impaired liver function, baldness, heart failure etc.

WADA publishes every year the World Anti-Doping Code Prohibited List. This list was originally published in 1963 and since 2004 WADA is in charge of publishing the list.

There are different groups in the list of the substances that are banned at all times i.e. in and out of competition and those that are banned in competition and those that are banned only in particular sports.

Substances prohibited at all times[3]

- S0. Non-approved Substances
- S1. Anabolic Agents
- S2. Peptide Hormones, Growth Factors and Related Substances
- S3. Beta-2 Agonists
- S4. Hormone and Metabolic Modulators
- S5. Diuretics and Other Masking Agents

Substances prohibited in-competition

- S6. Stimulants
- S7. Narcotics
- S8. Cannabinoids
- S9. Glucocorticosteroids

Substances prohibited in particular sports

- P1. Alcohol
- P2. Beta-Blockers

TUE:

There are certain substances on the WADA's prohibited list that an athlete may need to take due to illness or some medical conditions. Such a practice shall not be considered anti-doping rule violation. If it is consistent with the provisions of a Therapeutic Use Exemption (TUE) granted in accordance with the ISTUE[4].

In order to not consider this as a violation of rules the athlete must have proper medical documents with sufficient medical data that shows that he meets the criteria for grant of TUE. For this purpose the athlete must make a TUE application to his relevant Anti-Doping Organization. But the athlete is required to show that the prohibited substances is needed to treat that particular medical condition without which he would suffer a serious impairment to health. And that prohibited substance should not produce any enhancement of performance. Although there may be some enhancement of individual performance as a result of the efficacy of the treatment, nevertheless, such enhancement must not exceed the level of performance of the Athlete prior to the onset of his/her medical condition.

[3] https://www.wada-ama.org/sites/default/files/wada_2019_english_prohibited_list.pdf

[4] Code Article 4.4.1

WADA documents help the physicians to apply the criteria to the medical conditions of the athlete. The document is called the "Medical Information to Support the Decisions of TUECs"

APPLICATION PROCESS :

A TUE is required for all treatments involving prohibited substances. All the articles regarding the process are laid down in International Standard for Therapeutic Use Exemption (ISTUE).

- SUBMISSION:

Any athlete who needs a TUE must apply as soon as possible.

- In case of substances prohibited in-competition only: the athlete must apply atleast 30 days before his/her competition unless there is an emergency or exceptional situation[5].
- In case of substances prohibited at all times: The TUE application must be submitted as soon as the medical condition requiring the Use of a Prohibited Substance or Prohibited Methods is diagnosed. If the condition is diagnosed before the Athlete becomes subject to anti-doping rules prohibiting the Use of Prohibited Substances and Prohibited Methods, he/she should submit a TUE application as soon as he/she becomes subject to those rules, unless he/she is one of those Athletes competing only at national level or below who is permitted by his/her NADO to apply (if necessary) for a retroactive TUE[6].

All the forms of the Anti-Doping Organization must be either in French or English and any national language must be used. All the applications sent to WADA must also be in French or English or a translation of the application in French or English must be provided[7].

- SUBMISSION OF MEDICAL INFORMATION:

The athlete must submit all the appropriate medical information in French or English. The files received by the ADO must be translated in French or English before sending it to WADA.

- SUBMISSION OF APPLICATION:

The athlete applies to hi/her National Anti-Doping Organisation (NADO) and International Federation (IF) using the TUE application available on ADO's website[8].

The athlete then summits his/her TUE application to ADO via WADA's Anti-Doping Administration and Management System (ADAMS) or in paper format using the appropriate TUE form in the latter case.

- APPROVAL:

The application is examined by the Therapeutic Use Exemption Committee (TUEC). The decision is taken within 21 days from receipt of all the documents and is communicated to the athlete in writing by the ADO[9]

[5] ISTUE Articles 4.3 and 6.1
[6] ISTUE 4.3(c)
[7] ISTUE Article 5.4
[8] ISTUE Article 6.1
[9] ISTUE Articles 6.7 and 6.8

- COMMENCEMENT OF MEDICAL TREATMENT:

The TUE becomes effective only when the ADO notifies that TUE has been granted.

- DOCUMENTATION:

The following documents must be attached with the completed TUE application:

- A statement by an appropriately qualified physician, attesting to the athlete's diagnosis and need to Use the Prohibited Substance or Prohibited Method in question for Therapeutic reasons[10].
- A comprehensive medical history, including documentation from the original diagnosing physician(s) (where possible) and the results of all examinations, Laboratory investigations and imaging studies relevant to the application[11].

Incomplete applications will be returned to the athlete for completion and resubmission.

- REQUEST FOR ADDITIONAL INFORMATION:

The TUEC may ask for additional information, examination or other information from the athlete or from his/her physician or other medical experts[12].

- COSTS:

The athlete is responsible for all the costs related to the TUE application[13].

DURATION OF TUE:

The TUEC assigns each TUE a start and end date, upon which the TUE expires automatically. If the Athlete needs to continue to Use the Prohibited Substance or Prohibited Method after the specified end date, he/she must apply for a new TUE well in advance, to allow sufficient time for a decision to be made on the application before the existing TUE expires.

SPORTS BETTING:

Sports betting is a type of gambling that involves placing a wager, also sometimes referred to as a bet, based on the outcome or happening of a sporting event. The primary purpose of sports betting is to ancillary or extra money. A bet will have two possible outcomes. In either case one shall win a profit based on the bookmaker odds, or one may lose the wager.

As we all are familiar with the fact that sports betting also undertakes wagers on sports like rugby and tennis, it also involves betting on entertainment, such as the winner of variety shows, and in case of finance, such as interest rate changes.

ORIGIN:

The first ever record of sports betting dates back to a number more than 2,000 years ago. The Greeks' immense penchant towards sports led them to introduce the Olympics to the world also the earliest records of betting taking place in athletic competitions.

From the Greeks, sports betting started to spread towards ancient Rome where it was accepted as well as legalized too. Romans used to bet on the gladiator games, and even when this ancient sporting event eventually became dormant, gambling did not leave its

[10] ISTUE Article 6.2(a)
[11] ISTUE Article 6.2(b)
[12] ISTUE Article 6.5
[13] ISTUE Article 6.6

position and also started to spread to other kingdoms.

Later on, gambling became increasingly famous in England mainly in horse race betting. The English spread this practice like disease to the rest of the world, specifically US, where it rapidly became a favorite drudgery for many people.

Overall, gambling has continued to become a prominent practice worldwide and is very popular today, especially in the continents like Europe which has become the world's enormous sports betting market.

An increase in the variety and numerous categories of sporting events that people can easily wager on has also helped in improving the popularity of sports betting. Some of the sports one notices today were not even in existence more than a few centuries ago. Today, one can bet on a huge variety of sporting events from soccer to American football and everything type of sports falling in between.

CONCLUSION :

We would like to sum-up the essence of the paper by stating that the modern developments in technology in the field of sports has helped India organically, and has led to recognition of India as a country on the global map. Like every coin has two sides we also expect the developments to bring with them the gaping holes. The legal use of drugs or the drugs listed under the WADA, NADA, etc. which may help enhance the performance of players, but on a flip side as a result of fierce competition doping is still a disease to be cured. However, technology helps such authorities to combat such problems.

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