



JOB SHADOWING

FINAL REPORT

Implementing Sustainability in Mega Sports Events
The Tokyo 2020 Olympic and Paralympic Games as a Case Study



Co-funded by the
Erasmus+ Programme
of the European Union



Tokyo, Japan



8 September - 2 October 2022

ENGSO Youth - 2nd of October 2022

Amani Rawand Ben Brahim (Tunisia/Hungary)

Rawand is an Engso Youth Young Delegate of social inclusion 2021-2023. She is a writer, manager, and facilitator of Erasmus + and council of Europe projects. A human rights advocate with six years of field experience, she is pursuing a PhD in human rights and security studies in Corvinus University of Budapest, focusing on the rebuilding process in post conflict zones. She supports the use of sports as a means to advocate and contribute to the achievement of development and peace. In addition, Rawand was appointed as the first Ambassador for the Tunisian researchers in Hungary by the Association of Hungarian PhD and DLA Students for 2021-2022, and is currently serving as the Chair of the International Committee for 2022-2023 coordinating the work of 37 DOSZ ambassadors and delivering trainings for PhD students in Hungary using non-formal education through sports.

Babacar Djileh Dieng (Senegal)

Babacar is a current IT systems analyst and Database administrator, who volunteers during his free time as a sport manager and swimming coach in order to support the sport organisations reaching their goals into the society. He is member of the IOC Technology & Technical Innovation Commission and also the General Secretary of the Senegalese Olympic Academy that engages youth on the Olympic education and Olympic values.

Borbala Zala (Hungary)

Borbala is studying sports psychology and works in this field. In addition to applied psychology, she also conducts research on the effectiveness of mental training programs. The topic of her PhD is the examination of perfectionism and attitudes related to doping at the Hungarian University of Sports Sciences. She has been doing artistic swimming for almost 20 years and has already participated in many big competitions: World Championships, European Championships, World Series. She previously worked as a volunteer at many sporting events, gaining a lot of experience to qualify as a sports manager. She is working as a swimmer coach because it is important to her to make the future generation fall in love with the sport.

Cedric Vermeiren (Belgium)

Cedric Vermeiren is a school psychologist and care teacher in Belgium. He is passionate about sports, particularly field hockey. Cedric is one of the joint chairs of the European Hockey Federation Youth Leadership Committee, with the goal to inform, unite and inspire the youth of Europe. Since 2017 Cedric co-organises mega sport events such as the European Hockey ID (intellectual disabilities) championships, Youth Leadership festivals and other smaller side events. Beside organising, he is facilitating these events in order to give a voice to different groups of our society, such as youth. On a more national level, Cedric works closely with the Flemish Sports Federation on creating various platforms for young people to deliver their ideas and speak up to their associations.

Isaiah Kioiloglou (Greece/Cyprus)

Isaiah Kioiloglou is a Freelance Trainer and Facilitator. She started out as a teacher and is currently doing a MA in the field of Philosophy as she strongly believes in the interdisciplinary correlation of Sports, Philosophy and Education. She has cooperated with various organisations that support the cause of *Sports for Development* such as the International Olympic Truce Center, ENGSO Youth and Youthorama designing educational programmes and training youth workers on the matters of Sports and Human Rights and Sports for Sustainable Development through Erasmus+ and Council of Europe International Activities and Camps. She is also active in the field of *Informal and Non-formal Education*. She is currently designing and implementing learning-by-doing educational programs with a focus on promoting Olympic Values and Sustainable Development for children and young adults with the International Olympic Truce Center. She is also an ENGSO Youth Young Delegate since 2016 and is serving her third mandate. Lastly, she is a proud Hellenic Red Cross Volunteer.

Leyla Aminata Sonko (Senegal)

Leyla Sonko is a student in political sciences and international relations. She is a young Olympic ambassador and member of her National Olympic Academy. She's been part of many sport events such as Global Sports Week, and is also involved in her national Judo federation. She has been doing judo for almost 10 years, and still is competing for her national team, and that gave her the opportunity to volunteer in many sports events.

She is passionate and dedicated, and loves working on sports matters.

Marton Dvorak (Hungary)

Marton Dvorak is an exercise physiologist and researcher in Hungary. His work is usually connected with physical activity: he is working with elderly people and patients with chronic diseases (such as diabetes, high blood pressure, obesity). His PhD thesis is the method of individualization and controlling exercise therapy for these people. He also organises outdoor and other sport events for multinational companies in Hungary.

Marie Halna du Fretay (France)

Marie Halna earned a Master in International Relations and Geostrategy, specialising in international cooperation for development and post-conflict reconstruction. She is a committed Young Leader advocating Sport for Sustainable Development while being enrolled in international programs (ENGSO Youth, Global Sports Week, Young Ambassador for Sport & Francophonie). She has multiple experiences in Project Management and Public Relations, working with National Olympic Committees, French Ministries of Foreign Affairs and Defense. Beside her work, she is an avid sportswoman and a Facilitator with a keen interest in Physical Education. Her approach focuses on implementing inclusive mobility training and sport psychology to achieve performance and self-empowerment through sport.

Natsumi Gunji (Japan)

Natsumi Gunji is an associate professor in the Department of Education, Faculty of Letters, Kokushikan University in Japan. She received her PhD degree from Tokyo Gakugei University in Japan in 2016. The major is educational psychology, and research is conducted to train teachers who can teach sexuality education. She gives sexuality education lectures at junior high and high schools in Japan and collaborates with university students to develop learning designs for mental and physical health and happiness. Natsumi has served as a volunteer for Tokyo 2020 and has a sense of accomplishment in serving the world and others. She also enjoys bouldering, camping, and drumming.

TABLE OF CONTENTS

Terminologies and key concepts

Introduction

I - Mega sports events and Sustainability

II - Case study : Tokyo 2020 Olympic and Paralympic Games

1 - Facilities

2 - Management : Volunteers

3 - Effects of COVID-19 pandemic on the Games

4 - Education for Sustainability and Sport-ES

5 - Main outcomes : social, economic, environmental

6 - Legacy

III - Conclusion and recommendations

References

TERMINOLOGIES AND KEY CONCEPTS

Development:

One of the main priorities in the 21st century. It is a complex, multidimensional undertaking with one simple aim: to achieve higher quality of life for all people. There are many subsets in development: economic, social, environmental, and cultural.

ESD/EfS:

Education for Sustainable Development

Mega sports events:

Mega-sport events are international events with global reach. Researchers did not agree on one single definition of what mega-sport events are, but on several characterising requirements, including number of tickets sold, media reach, total costs and capital investment.

*Depending on the size of these four dimensions, an event can be categorised as a major, mega or giga event.

Olympic volunteer:

“In addition to performing specified duties, volunteers will be expected to “widely promote the attractions of Japan to the world through the Tokyo 2020 Games, having each volunteer demonstrate the strengths of the Japanese people, such as the Japanese spirit of hospitality omotenashi” (Tokyo Metropolitan government, 2016, p. 5).

Physical activity:

Understood as any voluntary bodily movement produced by skeletal muscles that requires energy expenditure. Physical activity encompasses all activities, at any intensity.

Sport-ES:

Sport-ES stands for Sport-environmental sustainability. Sport ES is an approach to teaching and learning based on the ideals and principles that underlie sustainability – human rights, poverty reduction, sustainable livelihoods, peace, environmental protection, democracy, health, biological and landscape diversity, climate change, gender equality, and protection of indigenous peoples.

Sport for Development and Peace (SDP):

The intentional use of sport and physical activity as a tool to contribute to development and peace goals.

Sustainable development:

In 1987, the United Nations Brundtland Commission defined sustainability as “meeting the needs of the present without compromising the ability of future generations to meet their own needs.”

Volunteering:

“Volunteering is defined as activities conducted for the purpose of society, in which participants willingly engage in, having no expectation of compensation”. (Source: Volunteering strategy p. 30)

INTRODUCTION

We, the Sport for Sustainable Development job shadowing participants, have put together this report to shed light on the legacy strategy for future mega sports events, based on our case study of **The Tokyo 2020 Olympic and Paralympic Games**.

Job Shadowing is a term used by the European Commission in the context of Erasmus+ for Europeans and Non-Europeans who participate in a long-term project organized by a Project Leader organization, in our case ENGSO Youth, and its partners: Kokushikan University (Japan), Senegalese National Olympic and Sports Committee (Senegal), Sport and Citizenship (France), Hungarian University of Sport Science (Hungary). Its objectives, which include sharing knowledge and skills with each other, building new contacts, networking and enhancing intercultural interaction, which will improve their career and employment opportunities. This report does not intend to present a full research on sustainable events and this is not a scientific report, but we are hoping that this report is a great conversation-starter for further research.

The goal of the report is to show as a case study Tokyo 2020 as the ultimate sustainable Olympic Games and review their policies whether they were indeed sustainable. The report contains the best practices and recommendations for future mega events.

We used questionnaires and interviews to get the opinion of the volunteers and the community. We also went to visit some of the Olympic facilities to observe how Tokyo Metropolitan Government (TMG) reused it after the Games.

For this report, we used a great number of sources: reports from the International Olympic Committee (IOC), scientific articles about sustainability, especially connected to the Tokyo 2020 Olympic Games, and also online sources. Moreover, we considered it important to find out about the opinion and knowledge of the local population:

1. Personal interview and questionnaire with volunteers of the Games

We used a complex method to familiarise with the experience and opinion of the volunteers. In the first step we made personal interviews with 10 people, then asked more volunteers to fill an online survey with the same questions (another 26 people were involved). It was very instructive to listen to their reports, in which there were many positive experiences but they also highlighted several factors that should be paid attention to when organising volunteers at the next Olympics (For summary of outcomes, see ATTACHMENTS).

2. Active survey among university students

In the Kokushikan University, we asked students (9 people) about their experience and personal impacts of the Tokyo 2020 Games through an interactive “game”. Although it was not a representative survey, we got some impression of how the average locals perceived the Games.

I - MEGA SPORTS EVENTS & SUSTAINABILITY

With the widespread use of various sports tournaments in different sport games, competing to host mega sports events became a goal and an ambition for all countries; given the positive impact and opportunities it brings to the hosting country as well as the legacy it leaves behind.

Be that as it may, there are numerous disadvantages associated with hosting these events.

The table below broadly outlines the positive and negative impacts of mega sporting events on the hosting country.

Impact area	Positive	Negative
Economic, Tourism, Commercial	Increased expenditure	Price inflation
	Economic benefits in form of tax revenues	Increase in local tax (to construct facilities needed for the event)
	Employment opportunities	Mismanagement of public funds
	Education and training	Real estate speculation
	Marketing of the host region as a tourism destination	Short-term contract work
	New opportunities for potential investors	
Infrastructure & Physical resources	New and improved infrastructure and local facilities	Infrastructural congestion
	Rejuvenation of urban areas	White elephants - Underused sports and associated facilities after the event
	Increased security	Limited access and redistribution of resources
Political	Propagation of political values and ideology	Suppression of human rights
Sport & Recreation	Introduction of programmes, services and facilities (e.g. "Football for Hope" in Kayelitsha)	Lack of sustainability of these programmes and services after the event
	Education and training	Access to needs-based accredited training to enhance employability
	Participation opportunities	Bias towards elite performance
Environmental	Attention to the natural environment	Loss of control over local environment
	Preservation of elements of physical landscape and local heritage	Pollution of nature in and around host region

Source: Knott, Brendon & Swart, Kamilla & Visser, S. The impact of sport mega-events on the quality of life for host city residents: Reflections on the 2010 FIFA World Cup. 2015

Remarkably, for the purpose of achieving immediate greater economic growth and socio-cultural visibility, sustainability was ignored for decades. With the realization that this

approach unsustainable, the concept of suitability in sports started to get more popularity and attention. It came to the realisation that it is indispensable to safeguard that mega sport events are sustainable for the hosting city, not only throughout the event, but also after its completion.

This was crowned by **the Berlin Declaration** (2013) and **The Kazan Action Plan (2017)** Adopted by The United Nations Educational, Scientific and Cultural Organization (UNESCO), during the Fifth and Sixth International Conference of Ministers and Senior Officials Responsible for Physical Education and Sport¹ respectively. Both documents committed to developing new standards for mega and major sport events, along with promoting investment in Sport and Physical Education Programmes, creating access to Sport as a Fundamental Right for All, and reserving the Integrity of Sport to name a few. (UNESCO Executive Board, 209th, 2020)

Also central to **the Kazan Action Plan** is a commitment to develop and implement policy that links sport and the SDGs. The plan recognises “the full potential of physical education, physical activity and sport to contribute significantly to the achievement of Sustainable Development Goals”.

This can be realised by committing to three main pillars of sustainability studied in this report:

First, the social pillar including diversity, inclusivity and respect for human right labours on the one hand, and existing research on education for sustainability and Sport-ES on the other.

Second, the environment pillar, tackling climate change initiatives, biodiversity, and resource management.

Third, the economic pillar, showcasing the investment outcomes by the government and stakeholders and addressing facility management (existent, permanent, and temporary venues).

In this context, the Olympic games are a perfect example for a mega-event that is held in a different country every four years around the globe. Japan invested considerable amounts of resources to put together the most alluring possible bidding offer and ensure that the 2020 sporting event are to be hosted on its land for the second time in history.

¹ The Six International Conference of Ministers and Senior Officials Responsible for Physical Education and Sport (MINEPS): UNESCO Headquarters in Paris, France in 1976; Moscow, Russian Federation in 1988; Punta del Este, Uruguay in 1999; Athens, Greece in 2004; Berlin, Germany in 2013; Kazan, Russian Federation in 2017)

II - CASE STUDY : TOKYO 2020 OLYMPIC AND PARALYMPIC GAMES

This section will focus on diverse aspects of the Tokyo Games including Facilities, Volunteer management, Effects of COVID pandemic, Education for sustainability and the main outcomes in terms of Social and Economical impact of the games, and finally the legacy.

1 - Facilities

The management of the facilities for the Games is one of the biggest investments not only in terms of construction, but also in terms of its maintenance. In order to do this, a well-thought-out strategy is needed. Because of that the Tokyo 2020 organizing team gave maximum consideration to sustainability at each stage of the planning and construction of the venues. They included local governments in each area where venues were located and together they focused on environmental efforts (such as energy saving, resource management, environmental preservation) and for later use of them by local people and athletes.

For the Games 43 competition venues were used and also Olympic/Paralympic Village and the International Broadcast Center/Main Press Center. The IOC and the International Federation **increased the rate of the use of existing venues from 40% to 58%** after the last Games to reduce the environmental impact and construction cost, which was a big step in light of sustainability (IOC Sustainability Report, 2021). The competition venues were classified into the 3 categories:

1. Exist venues (25 venues)

These facilities were also used in the Tokyo Games 1964 but more of them needed to be repaired or converted to a different use. In terms of sustainability, these were in a significant majority. These were for example Tokyo Stadium (rugby, football, modern pentathlon), Yoyogi National Stadium (handball, badminton, wheelchair rugby) or Makuhari Messe Hall (combat sports, sitting volleyball, goalball).

2. New permanent venues (8 venues)

New facilities intended to make a big contribution to the life of the city as new sport centers and for multi-purpose usage. They were designed and constructed with renewable and local timbers and the usage of the most sustainable operational solutions (such as heating, electricity, water consumption). Their use after the Games was also planned, and their location was determined based on this. These facilities are such as the Olympic Stadium, Kasai Canoe Slalom Center or the Tokyo Aquatics Center.

3. Temporary venues (10 venues)

These facilities and overlays were built just for the Games already with the plan of how the materials can be used in the best way after the usage. It is noted that when the Games was postponed to 2021, these venues were temporarily removed for safety reasons. There were temporary venues in Shiokaze Park (beach volleyball), Sapporo Odori Park (athletics) or Tsurigasaki Surfing Beach (surfing). On the other hand, Ariake Gymnastic Center was altered to an exhibition hall, while the timber of the Olympic Village Plaza were reused in other places.

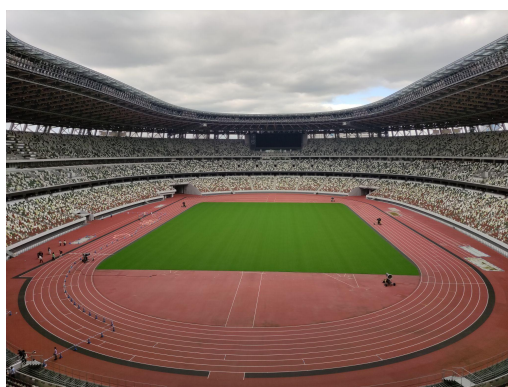
Table 1.: Comparison of Olympics venues (International Olympic Committee: Over 125 years of Olympic venues: post-Games use., 2022)

Venues	Beijing 2008	London 2012	Rio 2016	Tokyo 2020
- Existed	32%	42%	40%	58%
- New ones	45%	35%	40%	19%
- Temporary	23%	23%	20%	23%
Still in use	97%	95%	93%	?*
Not in use	3%	5%	7%	?*

**More venues are scheduled to reopen fully in 2023.*

Some new venues in Tokyo should be highlighted without any need for completeness:

1. Stadium



The Japan National Stadium is a multi-purpose stadium used mostly for association football in Kasumigaoka, Shinjuku, Tokyo, Japan. The facility served as the main stadium for the opening and closing ceremonies, as well as the venue for track and field athletics events at the 2020 Summer Olympics and 2020 Summer Paralympics in 2021. The building was designed to take a maximum advantage of the power of nature with solar cells and rainwater utilized effectively for toilets. 24,000 square meters of new greenery was planted to

ensure harmony with the surrounding landscape.

After the games some big events - football and rugby tournaments and national championship, cultural events and stadium tours were organized here.

2. Olympic Village



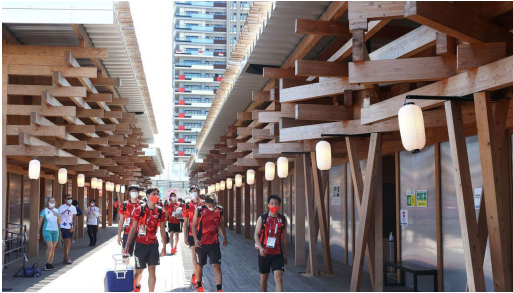
The Olympic and Paralympic Village was constructed in the Harumi waterfront district of Tokyo. The residential units used by athletes during the Tokyo 2020 Games, after that were renovated for use as general residential apartments. It is special that hydrogen-energy was used in this venue. The Tokyo Metropolitan Government has been working on compiling “the model plan of the post-games-use of the Olympic

and Paralympic Village”, and aims to establish a new community. The sustainability based on the three following concepts:

- A place for diverse groups of people to interact and live comfortably
- A place with water and greenery where residents can feel relax and at ease

- An environmentally sustainable place that uses new technologies

3. Village Plaza



The Village Plaza was a great initiative and symbol of sustainability as a part of the Olympic Village. It had the purpose to be a social and support facility for the athletes. It contains cafes, banks, medical spaces, lounges, hair salons, retail spaces and a media center. It was built from 40.000 timber loads which were offered by 63 local authorities across Japan free of charge to express Unity of Diversity. After the Games, these

loads were returned to their original places to reuse as part of other facilities, benches or other furniture.

4. Rafting Center



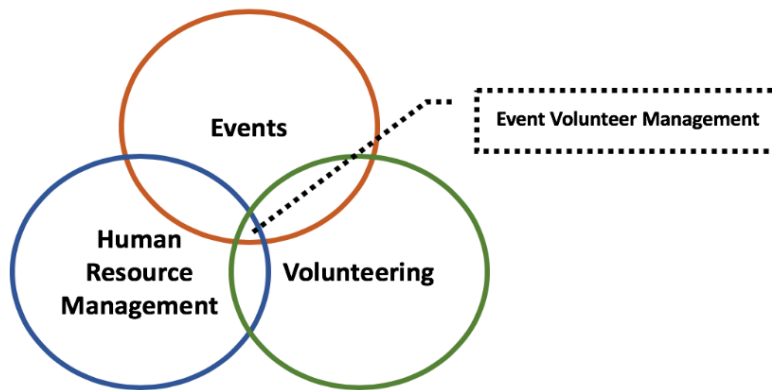
Newly constructed on land adjoining the Kasai Rinkai Park, the canoe slalom course is the first man-made course in Japan. After the Tokyo 2020 Games, the facility will provide a stable competition environment to foster and train athletes and offer opportunities to the general public a place to enjoy various water sports and leisure activities, including rafting in close cooperation with nearby areas (Kasai Rinkai Park, Kasai Marine Park).

Dark side: based on the interviews with the volunteers, there were many problems with the equipment of the facilities. Several athletes complained, for example, about the lack of Wi-Fi at training locations.

Based on the opinion of education students, the community did not follow the events of the Games (this could have been caused by the closures due to the covid epidemic) and the facilities are not used even after the Games (by the community).

2 - Management : Volunteers

Before we start speaking of volunteerism at mega sport events and moving to details about volunteerism at the Tokyo 2020 Olympic Games, we will shortly introduce you to the term Event Volunteer Management (later EVM). EVM is a combination of three key domains. Events, Volunteering and Human Resource Management.



Source: A systematic Quantitative Review of Volunteer Management in Events, 2017, p. 84

If we are speaking of volunteers at a mega sport event, it may help us to have a clear **definition** on what a volunteer is. “Volunteering is defined as activities conducted for the purpose of society, in which participants willingly engage in, having no expectation of compensation”. (Source: Volunteering strategy p. 30)

Definition of an Olympic volunteer: “In addition to performing specified duties, volunteers will be expected to “widely promote the attractions of Japan to the world through the Tokyo 2020 Games, having each volunteer demonstrate the strengths of the Japanese people, such as the Japanese spirit of hospitality omotenashi” (Tokyo Metropolitan government, 2016, p. 5).

Since the Olympic Games of London 2012 there are two types of volunteers, where they will always be called by a different name. In general, we speak of city volunteers and games volunteers. City volunteers are recruited, managed and trained by the Tokyo Metropolitan Government, while games volunteers are the responsibility of the Organising Committee.

Regardless of ages, genders or impairments many volunteers participated in the Games, supporting and enliven the Games in various occasions.

The aim was to realize a “society sustained through mutual sport” in which everyone helps each other, by ensuring to maintain and sustain the momentum of volunteerism that was boosted by the Games and linking it to various volunteering activities after the Games.

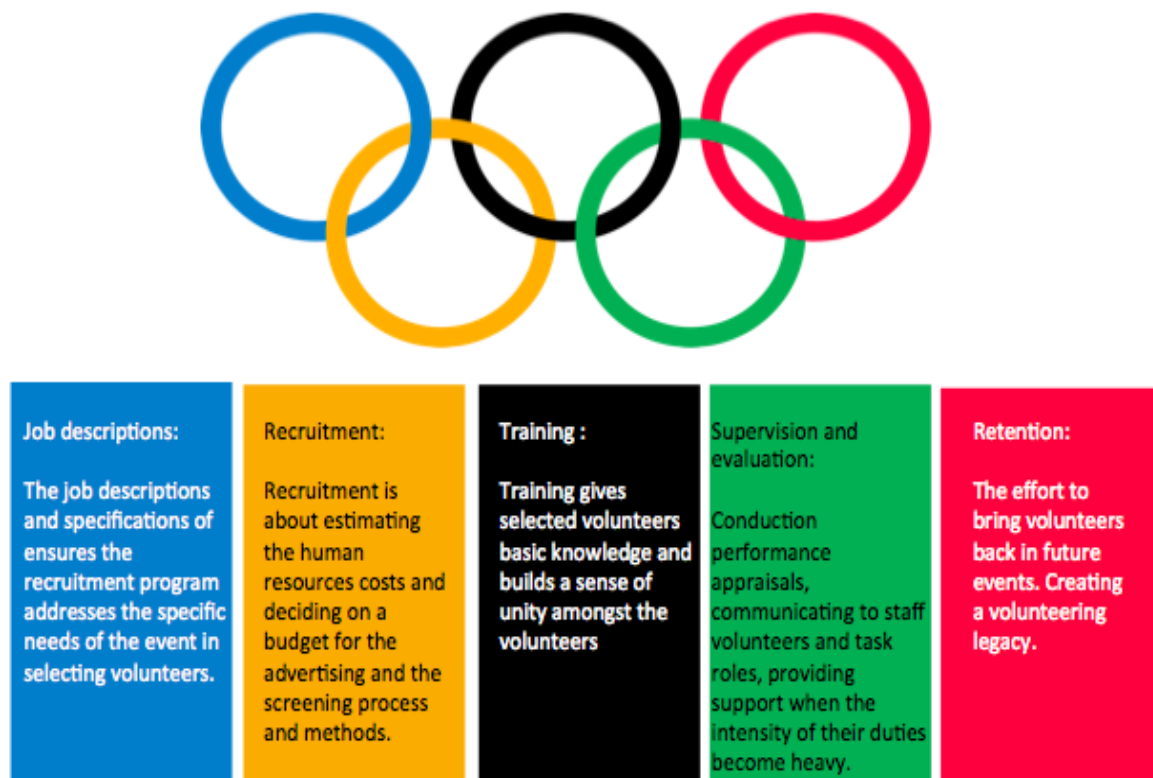
The participation of volunteers in the Tokyo 2020 Olympic Games will also play a big role in achieving the three concepts contained in the Olympic Games vision:

1. Achieving Personal Best, later reformed as ‘Striving for your personal best’
2. Unity in diversity → Accepting one another

3. Connecting to tomorrow → Passing on legacy for the future

Recruitment of volunteers at the Tokyo 2020 Olympics

Recruitment of volunteers at the Tokyo 2020 Olympics and Paralympics



The volunteer program can be undertaken in six phases. As you can see in figure 1, the draft schedule of the volunteer program, there is a timela-ine with different phases to be completed before the games. However, depending on the experience of volunteers, some phases can be skipped or run over at a higher speed.

1. Developing job descriptions and specification (2017 - mid 2018)
→ These documents will be used in a later phase to address the specific needs of the event in selecting volunteers.
2. Recruitment (mid 2018 - start of the Games)
→ This phase is generally based on selecting a budget for recruitment advertising so at the end the organising committee will have the number of volunteers needed for the event.

3. Training Volunteers

The training different volunteers will get will help them with the knowledge they need, but will also build a sense of unity.

a. Standardised training

→ This will give the volunteers the basic knowledge required for their service.
E.g.: Olympic and Paralympic values and Histories, an overview of the Games and the venues, the different sports, sustainability...

b. Leadership training

→ This training aims to prepare volunteers to take a leadership role for other volunteers. How to help each other, how to grow as a person,...

c. Specialised training

→ This is designed to provide individual volunteers with customised training to acquire information and skills for their specific job.

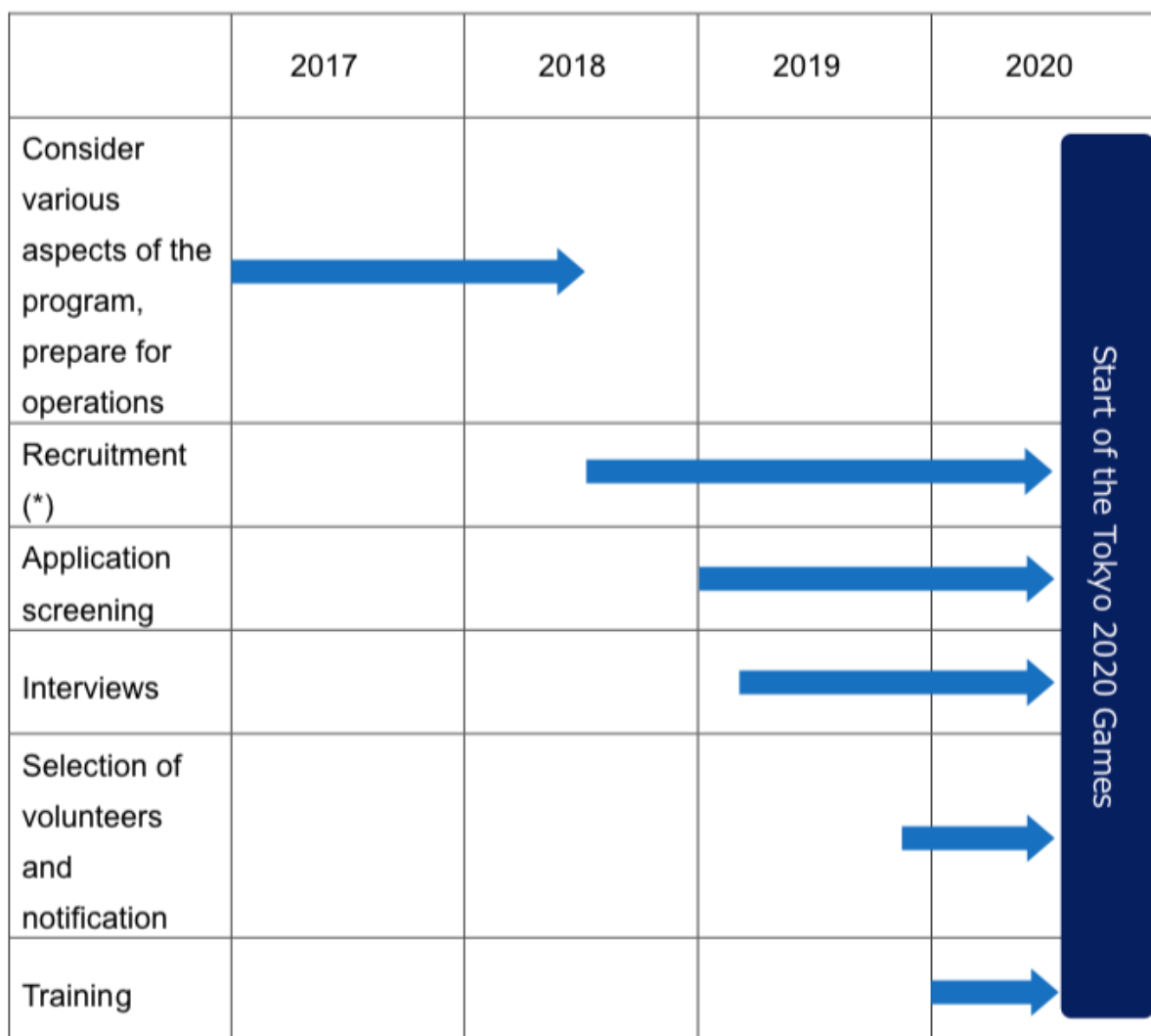
4. Supervision and evaluation

5. Termination or dismissal

→ In the event a volunteer is fired or taken out of the job description, by any reason, this should be notified to legal experts and human resources personnel.

6. Retention

Volunteer retention refers to keeping volunteers for future events. This can be done in many different ways, one way is having a survey at the end of an event. This way, the organising committee can work on the feedback of the volunteers. Another way is to establish a social network with volunteers.



Source: “Volunteering Strategy for the Olympic and Paralympic Games Tokyo 2020” by Tokyo Metropolitan Government and Tokyo Organizing Committee, 2016, p.8

According to a testimonial of Barbara Holthus, the candidates who applied are 60% women. The selection process took place mid March 2019 during an event where all volunteers who applied have to be. The event is entirely in Japanese, there were a few foreign people in the room who needed help with translation. According to the facilitators and interviewers, the other Japanese candidates should help those who sit next to them, it is a good practice of their English and a preparation of what they will be doing at the Olympics.

As said before, volunteering in Japan is seen as a way to show the Japanese omotenashi (hospitality) to the rest of the world. It is also a way for universities to teach foreign languages to students to help motivate them to volunteer.

Volunteering in Japan was mainly shaped by the hand of the government. This to create an image of volunteering which would be most beneficial for the state. It was a governmental effort for local reasons, such as neighbourhood associations. Because volunteering didn't grow from a person's perspective but from an obligation from the government, there is no inherent word for volunteering in Japanese.

The image of volunteering shifted right after the Hanshin-Awaji earthquake in Kobe. Right after this natural disaster, the image of volunteering went from “self-sacrifice for others” to “volunteerism as a means for self-realisation and self-fulfilment”. At this moment volunteering became less an obligation and more actually voluntary.

In order to motivate more than 100,000 people working for free at the Tokyo Olympics, the government needed a change in discourse about what volunteering is and how it can affect you as a person. That is why they promoted the event and being a volunteer on the event as a pleasant and joyful happening, using advertisements with smiling faces and big groups of friendship. The element of pleasure only came in the picture because of the need of many many volunteers for this event.

The Japanese government hoped that the Olympic Games would boost the image of volunteering in a positive way. Not only to show who they are and what they stand for, but also to have fun, to make friends. More information can be found in attachment 1. Where it is clear that friendship is one of the main aspects about volunteering. They also hope to have the same success as the London Olympics of creating a ‘Volunteering Legacy’ by creating an active volunteer network.

Creating the Post-Games Legacy helps in keeping the excitement for volunteering going, linking it to participation in a range of events. This will establish a culture of volunteerism where everyone supports each other. The Olympic organising committee expressed her gratitude to volunteers as well as created a system to manage volunteers after the Games.

Nevertheless, there are also some critics about the past Tokyo Olympics and the way they managed their volunteers. According to Honma Ryu, a critic who wrote a book on the past Tokyo 2020 Olympic games including his evaluation of unacceptable working conditions for volunteers. To sum up his main points of critics:

- Volunteers get a 1.000 Yen per day as travel costs. This is insufficient for those who live outside of Tokyo and have to come each day.
- The working hours are too long, it is seen as a fulltime job. They had to work for eight hours per day, with a minimum of 10 days.
- The exceptional summer heat and the country’s humidity were a risk on the health of numerous volunteers, which makes working for a long time dangerous.

3 - Effects of COVID-19 pandemic on the Games

In the history of the Olympic Games there was no occasion when it should have been postponed – except Tokyo 2020. This special event was caused by the COVID-19 pandemic, which caused a huge problem worldwide in that year and after. Because of this decision made in March 2020, the games were finally delayed for a year and held in 2021. This one year and the pandemic caused many problems to the organizers, athletes, staff, volunteers, spectators – every participant of the Games.

Firstly, the host organizer Japan had so much additional work, the two biggest parts were do not accelerate the spread of the virus and re-schedule the preparation process.

On preventing the spread of COVID-19, the organizers aimed to hold the highest priority on safety-first rules through many actions of which only a few are mentioned here:

- A model was developed that integrated source-environment-receptor pathways to evaluate how preventive efforts can reduce the infection risk among local spectators at the opening ceremony of Tokyo Olympic Games (Murakami et al., 2021).
- Wastewater-based epidemiology was implemented in the Olympic and Paralympic Village to better understand COVID-19 incidence. This method seemed to be a useful tool to control infections at mass gatherings (Kitajima et al., 2022).
- Tourists and spectators could not travel to Japan.
- Playbooks and guidelines were created to the staff and athletes that summarised the rules and hygiene management to prevent the spread of COVID-19, such as mask wearing, disinfection, temperature measuring.
- There were more PCR tests for the staff and athletes than before the Games.

In spite of all of these precautions and actions, holding the Tokyo Olympics significantly increased the daily average number of COVID-19 cases by 105 to 132 cases in Tokyo (47 to 65 cases in Japan as a whole) per million people, according to a scientific estimation (Esaka & Fuji, 2022).

To organize the Tokyo 2020 Olympic and Paralympic Games behind closed doors was also a huge change in the history of the Games. It was both a significant disruption to the global sports landscape and an economic issue. The Games in Japan may have become a tool for increased tourism and a showcase of national pride, highlighting their role as the peaceful nation achieved with the 1964 Games. However, it may be difficult to measure the extent to which this was possible because of the organization of the Games behind closed doors with no presence of fans and sports tourists. Normally, visits of the tourists mean a huge additional income to the host country, which is part of the overall impact of hosting the Olympic Games, but Tokyo did not benefit from that in 2021 (Ilevbare & McPherson, 2022).

The local people's thinking also changed because COVID-19. In our interviews, volunteers of the Games reported that others on the streets looked at them with judgement when they travelled in the T-shirts of the volunteers, because they could spread the virus through contact with strangers. This approach could strongly influence the perception of both the Games and volunteering work at mega events.

Finally, but not least, the COVID-19 pandemic affected the athletes in many ways as well. The cancellation of international competitions in 2020, the temporary closing of sport facilities, the infection itself then the vaccination and the one-year delay also forced the athletes and their staff to find alternative solutions to maintain performance and continue preparing for the Olympics (Cardinale, 2021).

The Tokyo 2020 Games organized in the middle of the COVID-19 pandemic meant considerable extra work to the host organizers, but at the same time they successfully started a process that helps their colleague to prepare and organize other international mega events under extreme conditions such as a pandemic.

4 - Education for Sustainability and Sport-ES

Definitions

As Dingle and Mallen (2017) suggest, education is a fundamental aspect of implementing sustainability in mega sports events. To promote ESD/EfS, the UN defined a period from 2005–2014 the “Decade of Education for Sustainable Development”. This UN “decade” was aimed at encouraging the integration of “principles and practices of sustainable development into all aspects of education and learning” (Buckler & Creech, 2014, p. 5).

To define the term Environmental Sustainability, we have to dive into philosophy first. The Philosophical Origins of Environmental Sustainability have two contradictory views:

1. Anthropocentrism: human needs are fulfilled only through the materials provided by nature
2. Ecocentrism: the needs of nature where it is valued for its own sake by humans (Brymer, Downey, & Gray, 2009; Catton & Dunlap, 1980; Gagnon-Thompson & Barton, 1994; Hoffman & Sandelands, 2005; Vlek & Steg, 2007). Indeed, humans often forget that we are, “part of nature”: We are born in nature; our bodies are formed of nature; we live by the rules of nature. Thus it is important to understand that human and nature are aligned and intertwined. We cannot and should not focus only on one perspective of the two.

As sport can offer plenty to facilitate this exchange and intertwining, and per Dingle/Mallen, there is a relevant field now characterised as “sport-ES”. Moore (2005, p. 78) further comments that sustainability education is defined as education that concentrates on the concept of sustainability in a manner that fits with the values of sustainability.

Despite some notable exceptions (e.g. Seattle University’s Certificate program in Sport Sustainability Leadership, (SU, 2016), education in sport-ES has yet to be fully researched, debated, and implemented within the sport academia. Four steps and two approaches have been suggested by Dingle/Mallen:

- **Step 1: The Role of Research and Debate in Defining Sport-ES**
- **Step 2: Identify a Vision for Sport-ES**
- **Step 3: Develop Best Practices for Training Sport-ES Educators**
- **Step 4: Understand the Barriers to Sport-ES Education and Devise Strategies to Overcome the Barriers**
- **Pedagogical Approach 1: A Stand-alone Sport-ES Course**
- **Pedagogical Approach 2: Integrating Sport-ES Across the Curriculum** ``

Foundational Steps in Sport-ES Education

Research and Debate

01

Sport academia should define this term within the sport industry and the respective fields : marketing, ethics, law, media, sport policy, etc

Specific and measurable goal setting is of utmost importance so that educators can succeed in their work

02

Identify a Vision

Focus here is on educators: which best practices does sport academia recognize as valuable enough to empower students to apply the sustainability in their own daily lives ?

Develop Best Practices

03

Identify the struggles in this process: for example, not all sport studies programmes have an interest, awareness or expertise to deal with this subject

04

Understand the Barriers

According to Dingle and Mallen

Step 1: The Role of Research and Debate in Defining Sport-ES

Firstly, sport academia needs to research and define sport-ES for the multiple entities within the sport industry. Many of these diverse entities are addressed in specific courses, such as marketing, ethics, law, media, social media, sport policy, politics of sport, finance and accounting, sales/consumption, and sport equipment and apparel manufacturing.

Step 2: Identify a Vision for Sport-ES:

Specific and measurable goal setting is of utter importance here. What is the way for educators to succeed if we do not know exactly where sport-ES for the multiple entities within sport is heading towards?

Step 3: Develop Best Practices for Training Sport-ES Educators

This situation can be problematic as the educators are considered to be the cornerstone when it comes to transforming the educational institutions to become effective in ensuring students are empowered in environmental sustainability (Lozano-García et al., 2008).

Step 4: Understand the Barriers to Sport-ES Education and Devise Strategies to Overcome the Barriers

It is noted that not all sport studies programs' priorities are to raise awareness about the subject or to enrich their course curricula with the integration of sport-ES and each professor, each researcher might have a different aspect of the term since it has not been established yet.

These include: an already crowded curriculum (Christie et al., 2015; Dawe et al., 2005; Sterling & Witham, 2008); limited staff awareness and expertise (Ceulemans, Prins, Cappuyns, & Conin, 2011; Dawe et al., 2005; Perera & Hewege, 2016); limited institutional commitment (Ceulemans et al., 2011; Dawe et al., 2005); and difficulty in designing assessments and organizing teaching materials (Perera & Hewege, 2016; Reid & Petocz, 2006).

In light of the global environmental situation and the need for sport to do its part to safeguard the natural environment for future generations, Dingle/Mallen argue that there are two pedagogical possibilities for sport-ES education.

Pedagogical Approach 1: A Stand-alone Sport-ES Course

All changes must have a starting point, and that sport management programs can begin to integrate sport-ES into the curriculum with an initial stand-alone course. Whilst they think that all courses within a sport management program ought to consider the nexus between sport and the natural environment, confining such teaching and learning to the topic-level alone is not enough for the task of providing higher education students with a good understanding of the many and intricate sustainability challenges that is the most important part of this relationship. Secondly, for sport management students to develop an understanding of sport-specific sustainability issues, a foundational course is required that critically evaluates the origins of these problems as well as what they mean in a sport context, and examines the sport-specific strategies that are required to address them. Despite this, the collegial nature of higher education means in a practical sense that faculty staff cannot dictate to their teaching colleagues that sport-ES be integrated into existing courses.

Pedagogical Approach 2: Integrating Sport-ES Across the Curriculum

Following the immediate inclusion of an initial stand-alone course to the sport management curriculum, the authors of this chapter propose that an integrated sport-ES approach be assimilated across the sport management curriculum for advanced understandings of the topic. According to Moore: "The pedagogy of sustainability education is about creating spaces where disciplines are not piled on top of one another but instead integrated in new ways. Educators need to move into these spaces as collaborators and co-creators of knowledge instead of experts and non-experts. By changing the practices in classrooms, there is a potential for transformations to occur—for individuals, organizations, and systems." (p. 80)

This definition is exactly what we witnessed in the classroom visit that we did on 22nd of September with Natsumi Gunji's Pedagogy class on the campus of Kokushikan University in Japan. The class consisted of 9 students majoring in Educational Psychology. Although knowledge around the subject of sustainability and sports was limited, the participants of the Job Shadowing conducted an interactive questionnaire through the form of a workshop that abided by the principles of non-formal education.

5 - Main outcomes : social, economic, environmental

Reaching the UN SDGs request great policy and big deals from Governments and different funders. Nowadays, To Host a Mega Sport Event, a munitions edition plan should be provided by the Organization Committee. And generally, hosting an event is motivated and justified by the positive impact it would provide. The assessment of this edition plan will be mainly based on the outcomes related to the impact on the Society, the Economy and the Environment.

Environnement

Climate change initiatives

While the Olympics were originally scheduled to begin implementing the Paris Agreement in 2020, the Tokyo 2020 Organizing Committee committed to achieving the 'Towards Zero Carbon' commitment in 2018, an ambitious Japanese sustainability plan at the time. The key objectives of (version 2) have been formulated.

Tokyo 2020 starts by calculating the carbon footprint during the preparation of the programme manual several years before the race expedition, and then monitors the carbon footprint of different activities at each stage of the race preparation, while measuring and evaluating the impact of changes in the race programme and our efforts to reduce the carbon impact on emissions. Now imperatively, the effort to reduce the carbon footprint based on procedure manuals and benchmarking calculations continues throughout the Olympic Games.

1-Carbon footprint calculations

It was made through almost all the steps of The Tokyo 2020 Games, such as the construction (by venue), the operation (energy consumption, torch relay, ceremonies, medical, covid measures...) and the spectators (accommodation, food and beverage, travels).

2-Carbon offset

With that method, the Tokyo 2020 games reached all their targets such as 100% of renewable electricity target achieved, the use of hydrogen energy, transport with low environmental impact (vehicle used in the games, effect of travel demand management), and lead activities of CO2 reduction by citizens of the Tokyo 2020 games.

Biodiversity

The main goal was to reduce the Olympics' environmental impact by the efficient use of water in the venue, the preservation of existing trees and the creation of new green spaces. In order to create good environmental conditions for the competition, measures have been taken to regulate the heat in venues and other areas, and maintain water quality and temperature in Odaiba Ocean Park. With the year of the Tokyo Games set as the target year, efforts to colour urban areas with flowers and greenery were carried out throughout the city to create centers of biodiversity where people can get close to nature.

- Heat related measures

	Athletes, competition officials	Spectators (Only for venues with spectators. At venues with no spectators, we used the following measures effectively for others at venues.)	Games staff, Games volunteers
Facilities and equipment	<ul style="list-style-type: none"> Athlete lounges Athlete rest areas Solar-heat-blocking pavement Zoning road for athletes Fans, misters 	<ul style="list-style-type: none"> Shaded areas, parasols Cool-air circulators, electric fans Rest areas for those who feel sick Aiding spectators on the last mile to venues 	<ul style="list-style-type: none"> Workforce dining areas Shaded areas, parasols Cool-air circulators, electric fans Rest areas
Beverage provision	<ul style="list-style-type: none"> Providing beverages 	<ul style="list-style-type: none"> Selling beverages Allowing beverages to be brought in (under certain conditions) Temporary water taps 	<ul style="list-style-type: none"> Providing & selling beverages Water dispensers Tokyo 2020 official water bottles made from 100% recycled PET
Preventive operations (incl. equipment)	<ul style="list-style-type: none"> Changing event schedules Collaborating with IF in reviewing standards for interrupting/cancelling a competition, rules on rehydration Providing ice bags Cooling vests for competition officials 	<ul style="list-style-type: none"> Sport presentation Announcement at venues Distributing paper hand fans Mist-spraying clues Potted plants of morning glories in pedestrian screening areas (PSAs) 	<ul style="list-style-type: none"> Explaining ways to take adequate breaks Notebooks for health management Providing salt tablets Providing body cooling sheets Providing "OSHIBORI" (wet towel to wipe the hands and face) Wearing sunglasses (guards)
Medical operations	<ul style="list-style-type: none"> Medical office for athletes Ambulance deployment Medical ice bath 	<ul style="list-style-type: none"> Medical office Ambulance deployment First responders' patrolling venues Building first-aid stations 	<ul style="list-style-type: none"> Medical office Ambulance deployment
Information provision, sending reminders	<ul style="list-style-type: none"> Disseminating weather information through IF/NF, NOC, NPC Weather Information Centre Explaining Japan Tourism Agency's Safety Tips WBGT monitoring 	<ul style="list-style-type: none"> Tokyo 2020 official website Tokyo2020 Cooling Project Tokyo 2020 official mobile app Digital guide sent to spectators Website of Japan's Ministry of the Environment, Japan Meteorological Agency Explaining Japan Tourism Agency's Safety Tips WBGT monitoring 	<ul style="list-style-type: none"> Enhancing understanding of the measures at pre-Games training Explaining Japan Tourism Agency's Safety Tips WBGT monitoring

- Water circulation and quality
- Greening
- Biodiversity conservation and regeneration of natural environments

Resource management

The Tokyo Olympic and Paralympic Games had set, from the beginning, Zero waste as a major goal. To do this, they used 3 concepts (reduce, reuse, and recycle) with the help of the whole community and partners to achieve this. As with the climate change initiatives, these actions were directed at people and society and the environment and were placed everywhere, from the infrastructure to the spectators and volunteers. By simple actions such as reducing the edible part of food waste, using recycled materials, or using renewable materials in a sustainable way, it has been possible to achieve this goal of leaving a legacy of resource management at major events.

1-0 waste

- Reduction in food loss and waste
- Reduction of packaging materials
- Recycling of food waste

2 Recycling and reuse

- Reuse and recycling of procured goods
- Use of recycled materials
- Use of recycled medals
- Reuse and recycling of construction waste
- Reduction of waste and environmental impact
- Reuse and recycling of waste generated during games

Social

Human rights

1-Inclusivity and gender equality

The Tokyo 2020 Olympic and Paralympic Games have seen an increase in diversity across the board. Several initiatives have been taken in this direction and many examples can be found:

1) These Games witnessed the strongest and most diverse participation in terms of countries, including the Refugee Olympic Team, for better inclusion.

2) 48% of Olympians and 42% of Paralympians were women, a record percentage compared to other Games.

3) Greater inclusion was seen between the Olympic and Paralympic Games which worked closely together to see the success of both.

4) The LGBTQ community had its greatest participation in these games, where even transgender athletes could compete in the gender category they identified with.

5) Activism was much more liberal as athletes fighting for personal causes such as anti-racism, discrimination, or black lives matter were able to express themselves freely through their sports to inspire their targets.

Olympic Games Tokyo 2020	Tokyo 2020 Paralympic Games
<ul style="list-style-type: none"> About 48 per cent of the athletes participating were women. Substantial improvements to the competition schedule to give equal visibility between women's and men's events and featured nine more mixed events than at Rio 2016, raising the overall number to 18. 201 in total, out of 205 participating National Olympic Committees (NOCs) and the IOC Refugee Team, had at least one female athlete in their respective Olympic teams. All the NOCs and the Refugee Team were encouraged to have their flag carried by one female and one male athlete at the Opening Ceremony. As a result, 91% of participated NOCs and the Refugee Team had both a female and a male flag bearer. 	<ul style="list-style-type: none"> About 42 per cent of all the athletes were women: 1,853 athletes, an increase on the 1,671 women who competed at Rio 2016 (38.6 per cent). Forty mixed events were held, two events more than that at Rio 2016. 140 in total, out of 162 participating National Paralympic Committees (NPCs) and the IPC Refugee Team, had at least one female athlete in their respective Paralympic teams. All the NPCs and the Refugee Team were encouraged to have their flag carried by one female and one male athlete at the Opening Ceremony. As a result, 60% of participated NPCs and the Refugee Team had both a female and a male flag bearer.

2-Diversity

COVID-19 changed the whole organisation of the olympic games. While more than 80,000 volunteers from almost 120 countries were expected to participate in the Games, it was necessary to remobilise and work only with Japanese volunteers. This had the effect of increasing the diversity of recruitment, as there was no age limit, and 60% of the staff were women. Diversity does not stop with the volunteers, but also extends to the venues where several diversity, safety and inclusion features have been implemented:

- The creation of user-friendly spaces for Paralympians
- A variety of food options in the Olympic and Paralympic villages
- Multilingual communication at venues
- Females athlete's department and physicians for paralympics
- Multi faith online services at olympic and paralympic village
- Interaction with robots
- Prohibiting photography taken leading to sexual harrassement

Economy

The Tokyo Olympics was expected to have positive effects on the Japanese economy and those effects would come mainly through the following three demands channels :

- An increase in foreign tourism
- An increase in construction investment

- An increase of decent work created

But with the COVID-19 Pandemic, a reassessment of the impact has been done targeting more the focus on the last points. Results indicate that while there is a gap between the expected economic impact gained by hosting of the Tokyo 2020 Summer Olympic Games and reality, it is not substantial from the perspective of economic growth for Japan.

Tokyo Metropolitan Government, Bureau of Olympic and Paralympic Games Tokyo 2020 Preparation has released a detailed calculation, estimating the economic and legacy effects related with holding the Tokyo 2020 Games in March 2017. The period of analysis starts from 2013, when Tokyo won the bid to host the 2020 Summer Olympics, all the way to 2030, ten (nine) years after the games. The analysis focuses on the Tokyo region, as well as Japan nationwide. The method used to calculate the economic effects was based on input-output tables from 2011.

The effects were further divided to direct effects, as well as legacy effects. Direct effects are described as increase in demand caused by the investments and expenditures directly related to hosting the Olympic Games. Likewise, the legacy effects were described as increase in demand based on initiatives implemented in Tokyo in expectation of the post-Games legacy.

Based on the calculation conducted by Tokyo Metropolitan Government, the direct economic impact of hosting the Tokyo 2020 Summer Olympic Games would amount to approximately US\$18 billion. More than half of this figure was from Games operations, including the temporary facilities, infrastructure and software costs. From the perspective of this thesis, the consumption of tournament participants and spectators was forecasted to be US\$1.9 billion.

Table 7: Direct effects related to hosting of the Olympic Games (based on Tokyo Metropolitan Government, 2017)

Item	Description	Increase in demand (\$US B)
Facility maintenance	Maintenance costs related to the new permanent establishments	3.2
Games operating	<ul style="list-style-type: none"> - Temporary facility maintenance costs - Energy infrastructure - Software costs (transportation, security, technology, operations, management / public relations, etc.) 	9.6
Consumption of tournament participants and spectators	- Consumption expenditures (transportation expenses, accommodation expenses, food and drink expenses, shopping expenses, facility usage)	1.9
Household consumption	- Sales of Olympic and Paralympic-related goods sold at the time of the Games	2.6
International video production and transmission	- Expenditures related to video production and transmission for the Olympic and Paralympic Games	0.3
Corporate marketing activities	- The amount of increase in demand will be the marketing activity costs of the sponsor company (purchase of TV programs, etc.).	0.3
Total		18.0

The indirect effects were forecasted to amount to more than US\$110 billion, of which the majority was accounted for “activating economy using state of the art technology”. This segment includes expansion of tourism demand, creation of an international business zone, promotions of SME’s and industrial expansion. The second largest portion, amounting to US\$20.5 billion was post-game utilization of new permanent venues, the Olympic village and the new infrastructure created in order to host the Games. Again, from the perspective of this thesis, the majority of this indirect effect would be included in the legacy planning of hosting Olympic Games.

Table 8: Indirect effects related to hosting of the Olympic Games (based on Tokyo Metropolitan Government, 2017)

Item	Description	Increase in demand (\$US B)
<ul style="list-style-type: none"> - Post-games use of new permanent venues and the Olympic/Paralympic Village - Urban development in Tokyo and environment / sustainability 	<ul style="list-style-type: none"> - Post-games use of new permanent venues and the Olympic/Paralympic Village - Transport infrastructure developed for the Games, accessibility measures, the realisation of a hydrogen-powered society, etc. 	20.5
<ul style="list-style-type: none"> - Sports, citizen participation/volunteering - Culture and education/diversity 	<ul style="list-style-type: none"> - An increase in sports players/spectators, promotion of para-sports - Increase in volunteer activity, increase in the audience for cultural events - increase in international students, etc. 	7.4
Activating economy using state of the art technology	<ul style="list-style-type: none"> - Expansion of tourism demand - Creation of an international business zone - Promotion of SMEs - Expansion of ITS/robotics industries, etc. 	83.3
Total		111.3

Research conducted by Nomura Research Institute showcases the economic loss of hosting the Tokyo 2020 Olympics. According to the research, by banning overseas spectators, the economic loss amounted to US\$1,372 million. Furthermore, adding the 600,000 refunded game tickets towards foreign visitors, and the amount of loss becomes \$US151,318 million. Looking at the big picture, this economic loss amounts to 0,03% of Japan's GDP (NRI, 2021).

For this estimation, the number of foreign tourists and their expenditure from 2019 was used as a baseline. The number of expected visitors and ticket sales is based on an estimation conducted by the Tokyo Metropolitan Government in 2017 and Nomura Research Institution.

Domestic spectators were also limited in numbers, but compared to the magnitude of foreign visitors, the economic loss is fairly small. Japanese spectators (local residents) will often stay at relatives of friends housing, and the consumption of food, transportation or services does not get included in the economic impact analysis

Table 9: The economic loss due to banning overseas spectators (Nomura Research Institute, 2021)

Economic Loss due to banning overseas spectators		
Number of foreign tourists	31,882,049	
2019 Foreign Visitor Expenditure	4,811,300,000,000	JPY
Average expenditure per visitor	150,909	JPY
Expected number of visitors	1,000,000	
Economic loss from tourism	150,909,372,230	JPY
Ticket refund	45,000,000,000	JPY
Economic loss \$US million*	151,318	(1 USD = 110 JPY)

Finally, these games were particular because of the COVID-19 pandemic and all the planned actions had been impacted. But at the end, quite satisfied results were gained.

6 - Legacy

Climate change

Tokyo 2020 was able to use a large number of low-pollution and fuel-efficient cars during the Games. This resulted in the lowest ever emissions intensity related to passenger car transportation for any Olympic and Paralympic Games. Carbon offsetting for the Tokyo 2020 Games was made possible by the cooperation of businesses. Credits were derived from extra carbon reduction activities carried out by the business operators. This is the first time in the Olympic and Paralympic Games that carbon offsetting was implemented.

Sustainability management system

Tokyo 2020's management system for the 2020 Olympics and Paralympics was established in 2017, and acquired third-party certification in 2019. The organization used existing systems and had already been implementing key components of the ISO 20121 standard when it came to developing its sustainability management system.

Resource management

Sustainability concerns are sometimes considered as conflicting with other requirements such as safety and health. It is important to include sustainability as early as possible, prior to procurement stages. At the Tokyo 2020 Games, they conducted discussions and presented their sustainability approach from the very early stages of Games planning. However at the starting stage of planning, more should have been taken into consideration. Under the circumstances of the Tokyo 2020 Games, in which there was a postponement and reductions in the number of spectators and Games staff, providing more flexibility around

procurement between suppliers and the organising committee was important to avoid waste and optimise resources in line with the 3Rs concept.

[Reducing food loss and waste]

Whilst reliably providing athletes and staff meals that were safe, healthy and satisfying and responded to their demands, the number of people needed to be served was never constant, continually rising, peaking and ebbing - over the duration of the Games.

[Post-Games reuse of procured items]

Although rentals and leasing for procurement was prioritised, and worked to arrange reuse destination of items before the Games, arranging for all destinations and completely eliminating surplus of consumables before the start of the Games were not easy tasks. To ensure post-Games reuse destinations, Items were also sold to be reused by companies.

[Sorting and recycling of waste]

To achieve Tokyo 2020's high target rate of 65% for reusing or recycling waste, it was essential to work backwards from calculating recycling rates to set categories for sorting waste and to ensure quality of the sorted waste.

Although difficulties were encountered with compliance for people who have never been required to perform such detailed sorting in their normal daily lives, improved sorting and recycling of waste was brought on by the fact that volunteers and other Games staff actively campaigned and called out for waste sorting in resourceful ways to suit each venue, as well as on the combined efforts of every waste operator towards recycling.

Moreover, items cleaning articles required because of the pandemic such as disinfectants and wipes, and which were disposed of as combustible waste, increased all these have likely affected the recycling rate. To encourage spectators to correctly sort their waste, there were "waste separation guides" (staffs) near waste bins to guide visitors on separating their waste.

[Waste recycling method]

For recycling waste, material recycling was a top priority. There were various ways to recycle waste into raw materials; plastic waste was recycled as plastic, soiled paper containers that were typically incinerated was recycled as toilet paper, polyester fibres were recycled as heat insulating material, wood waste was recycled into chipboards for housing, and waste polyvinyl chloride (PVC) products that were difficult to recycle were recycled as raw materials through chemical recycling.

[Involvement and cooperation]

At the Tokyo 2020 Games, numerous people including city residents participated in various projects such as the Tokyo 2020 Medal Project and the Recycled Plastic Podium Project.

Natural environment and biodiversity

The Tokyo 2020 Olympics and Paralympics were an opportunity for the organizing committee to learn more about biodiversity conservation. They searched for and eliminated invasive alien species at the competition venues, as well as worked to protect rare sea turtles. This is relevant not only during the Games but also as a potential roadmap after the Games for creating a natural environment in Tokyo.

Human rights, Labour and Fair Business Practices

At the Tokyo 2020 Games, many stakeholders who were part of the Olympic Games were able to experience an atmosphere of respect towards Human Rights. For the organizers of future mega sporting events, open management will become even more essential in order to increase engagement with diverse stakeholders and address all the important issues involved in human rights. The Tokyo 2020 Games provided a platform to put mental health, which was heavily related to the added pressure of COVID-19, the delay of the Games etc., in the global spotlight, thanks to some renowned athletes. It was also the place to see sport and athletes fulfilling their role in furthering respect for human rights in society.

With athletes having approval to express their views under certain conditions whilst participating in sport, the Tokyo 2020 Games became the place to see sport and athletes fulfilling their role in furthering respect for human rights in society.

Venue Development

Revising the venue plans with the support of the IOC and the International Federation (IF) made the use of existing venues increase from about 0% to about 60% of the total venues, which contributed to reducing environmental impact such as use of construction materials as well as reducing construction cost. At the Olympic Stadium and the competition venues developed by TMG, workshops with groups of people with impairments and academic experts were held, and based on various opinions, seats for wheelchair users and accessible toilets were installed and refurbished. After the Games, it's important that new permanent venues and other structures be used in promoting sport and making the lives of local people more comfortable as part of the Olympic and Paralympic Games legacy.

Highlights of the 2020 Games legacy

Tokyo provided valuable experience in hosting large-scale events under the pandemic. Although a number of international events had taken place prior to this, with the help of the “bubble” management system, this was the first time such a large movement of athletes had taken place. According to statistics, a total of 11,309 athletes from 206 delegations had registered for the 2020 Olympic Games. People with different identities (including athletes, referees, technical officials, and accompanying officials) and locations (including airports, railway stations, venues, and the athletes’ village) were provided with customised plans (Wang & Jiang, 2021). As Tokyo is usually seen as a technology highland, the Olympics could not be missed as a window to present new cutting-edge products. From epidemic prevention and control to virtual game viewing, from high-tech barrier-free facilities to hydrogen energy vehicles, high tech could be seen almost everywhere (Wang & Jiang, 2021).

The Tokyo Olympics was a unique sports event held in a special historical moment. It demonstrated to the world the unique role of sports in uniting humankind and inspiring courage. Its comprehensive pandemic prevention and control and high-tech power have made all things possible, and have also become unique legacies left by Tokyo to the world (Wang & Jiang, 2021).

III - CONCLUSION AND RECOMMENDATIONS

The report has provided insights into the Tokyo 2020 Olympic and Paralympic Games and aimed to provide a general view on implementing sustainable sport events. This ultimately resulted to a list of recommendations for future mega sports events organizing committees to be able to implement sustainability more effectively in their events; these recommendations include but not limited to:

- Using as many existing facilities as possible.
- Encouraging the reuse of temporary venues and exploring alternative options for reuse.
- Making the Olympic and Paralympic venues a desirable place that showcase examples of best practices on sustainable ways of living.
- Providing public transportation connecting the geographically segregated areas in order to include all communities in games and events.
- Enhancing a secure event atmosphere by setting adapted security measures.
- Providing sufficient garbage bins to encourage spectators to keep the area clean.
- Providing sufficient kiosks for supplies (water, food, etc.) and toilets.
- Focusing on preventing rather than recycling.
- Reducing food waste by providing educational materials during the events.
- Linking the Olympic Values Education Program to the primary and High School education program of each participating country.
- Including the participation of the youth as a priority goal in legacy strategies.
- Enlarging the criteria to volunteer, including the minimum number of days available to ensure an inclusive participation of various volunteers.
- Focusing on sustainability during Volunteers training. Volunteers can gain valuable skills and act as legacy multipliers after the games by spreading best practices into their own communities.
- Making sure volunteers have fun. Volunteering is also about making friends, having memories for a lifetime, therefore contributing to an active Olympics volunteers alumni network.

- Keeping the Olympic and Paralympic spirit alive for generations to come. Focus on the youth and how mega sport events can create a durable network of young people aiming to make the world a better place.

Although this is a relatively small-scale exploratory study, we hope that this report will be useful for organizing future mega sports events. As ENGSO Youth representatives, we believe that further research should focus on youth and how they can be better included before, during and after mega sports events.

Further insightful resources for future sports events may be found in the Paris 2024 Sustainability and Legacy Report (see references).

REFERENCES

- Brymer, E., Downey, G., & Gray, T. (2009). Extreme sports as a precursor to environmental sustainability. *Journal of Sport & Tourism*, 14(2-3), 193-204.
- Buckler, C., & Creech, H. (2014). Shaping the future we want. United Nations Decade of Education for Sustainable Development (2005-2014): Final report. United Nations Educational, Scientific and Cultural Organization. <https://sustainabledevelopment.un.org/index.php?page=view&type=400&nr=1682&menu=35>
Downloaded: 2022.09.26.
- Cardinale M. (2021). Preparing athletes and staff for the first "pandemic" Olympic Games. *J Sports Med Phys Fitness*, Aug;61(8), 1052-1060.
- Ceulemans, K., Prins, M., Cappuyns, V., & Conin, W. (2011). Integration of sustainable development in higher education's curricula of applied economics: large-scale assessments, integration strategies and barriers. *Journal of Management and Organization*, 17, 621-640.
- Catton, W. R., & Dunlap, R. E. (1980). A new ecological paradigm for post-exuberant sociology. *The American Behavioral Scientist*, 24(1), 15.
- Christie, B., Miller, K., Cooke, R., & White, J. (2015). Environmental sustainability in higher education: what do academics think? *Environmental education research*, 21, 655-686.
- Dawe, G., Jucker, R., & Martin, S. (2005). Sustainable development in higher education: current practice and future developments. A report for the Higher Education Academy. Retrieved from York, UK: <http://www.heacademy.ac.uk/assets/York/documents/ourwork/tla/sustainability/sustdevinHEfinalreport.pdf>
- Dingle, G. & W., Mallen, C. (2017). Sport-environmental sustainability (Sport-ES) education. In B. McCullough & T. B. Kellison (Eds.), *Routledge handbook of sport and the environment*. London, UK & New York, USA: Routledge.
- Esaka T & Fujii T. (2022). Quantifying the impact of the Tokyo Olympics on COVID-19 cases using synthetic control methods. *J Jpn Int Econ*, Dec;66, 101228.
- Gagnon-Thompson, S. C., & Barton, M. A. (1994). Ecocentric and anthropocentric attitudes toward the environment. *Journal of Environmental Psychology*, 14(2), 149-157.
- Holthus, B. (sd). (2020). *Volunteering Japan Style: "Field cast" for the Tokyo Olympics*. Routledge
- Hoffman, A. J., & Sandelands, L. E. (2005). Getting right with nature anthropocentrism, ecocentrism, and theocentrism. *Organization & Environment*, 18(2), 141-162.
- Ilevbare SI & McPherson G. (2022) Understanding COVID-19: A Hybrid Threat and Its Impact on Sport Mega-Events. A Focus on Japan and the Tokyo 2020 Olympic Games. *Front Sports Act Living*, 22(4), 720591.
- International Olympic Committee (2022). Over 125 years of Olympic venues: post-Games use. *The Olympic Studies Centre*, <https://olympics.com/ioc/olympic-legacy/over-125-years-of-olympic-venues>

Downloaded: 2022.09.26.

International Olympic Committee Sustainable Report 2021. *The International Olympic Committee*,
<https://stillmed.olympics.com/media/Documents/News/2021/12/IOC-Sustainability-Report-2021.pdf>

Downloaded: 2022.09.16.

Kitajima M, Murakami M, Iwamoto R, Katayama H, Imoto S. (2022). COVID-19 wastewater surveillance implemented in the Tokyo 2020 Olympic and Paralympic Village. *J Travel Med*, 31;29(3):taac004.

Knott, B; Swart, K.; Visser, S. (2015). The impact of sport mega-events on the quality of life for host city residents: Reflections on the 2010 FIFA World Cup. *African Journal of Hospitality, Tourism and Leisure*, 4, 1-16.

Lozano-García, F., Gandara, G., Orietta, P., Mario, M., Dora Elia, H., & Donald, H. (2008). Capacity building: a course on sustainable development to educate the educators. *International Journal of Sustainability in Higher Education*, 9, 257-281.

Moore, J. (2005). Is higher education ready for transformative learning? A question explored in the study of sustainability. *Journal of transformative education*, 3(1), 76-91.

Murakami M, Miura F, Kitajima M, Fujii K, Yasutaka T, Iwasaki Y, Ono K, Shimazu Y, Sorano S, Okuda T, Ozaki A, Katayama K, Nishikawa Y, Kobashi Y, Sawano T, Abe T, Saito MM, Tsubokura M, Naito W, Imoto S. (2021). COVID-19 risk assessment at the opening ceremony of the Tokyo 2020 Olympic Games. *Microb Risk Anal*, Dec;19, 100162.

Perera, C. R., & Hewege, C. R. (2016). Integrating sustainability education into international marketing curricula. *International Journal of Sustainability in Higher Education*, 17(1), 123-148.

Reid, A., & Petocz, P. (2006). University lecturers' understanding of sustainability. *Higher education*, 51(1), 105-123.

The Tokyo Organising Committee of the Olympic and Paralympic Games (2021). Sustainability Post-Games Report. *The Tokyo Organizing Committee of the Olympic and Paralympic Games*

https://library.olympics.com/Default/doc/SYRACUSE/1327958/sustainability-post-games-report-tokyo-2020-the-tokyo-organising-committee-of-the-olympic-and-paraly?_lg=en-GB

Downloaded: 2022.09.16.

Thomas, K. (2021). Tokyo 2020 Olympic Games Volunteer Preparation. (poster presentation)

http://jaltcue.org/files/CUE_ESP/CUEESP2017/Posters/2017-CUE-ESP-Session1-Thomas-K.pdf

Downloaded: 2022.09.26

Tokyo Metropolitan Government, Tokyo Organising Committee of the Olympic and Paralympic Games. (2016). Volunteering Strategy for the Olympic and Paralympic Games Tokyo 2020. Tokyo, Japan.

UNESCO. (2017). *International Conference of Ministers and Senior Officials Responsible for Physical Education and Sport, 6th, Kazan, Russian Federation*.
<https://unesdoc.unesco.org/ark:/48223/pf0000252725>

Downloaded: 2022.09.27.

UNESCO. (2020). *Invitations to the Seventh International Conference of Ministers and Senior Officials Responsible for Physical Education and Sport (MINEPS VII)*. <https://unesdoc.unesco.org/ark:/48223/pf00000372849>

Downloaded: 2022.09.27.

Vlek, C., & Steg, L. (2007). Human behaviour and environmental sustainability: problems, driving forces, and topics. *Journal of Social Issues*, 63(1), 1-19.

Wang, N., & Jiang, Y. (2021). Legacy of the Tokyo 2020 Summer Olympic Games. *The Innovation*, 2(4), 100178.

Tuomas Koskinen. The economic impact of Tokyo 2020 Olympic Games that never happened.

https://www.theseus.fi/bitstream/handle/10024/744986/Thesis_Tuomas_Koskinen_YHS2020_SS_FINAL.pdf?sequence=2&isAllowed=y

Download : 2022.09.27

ATTACHMENTS: Summary of outcomes of volunteers questionnaire

Questions were;

1. How was your overall experience at the Olympics as a volunteer?
2. What was the most memorable moment for you?
3. What did you feel like you gained from this volunteering experience?
4. (Picture about SDGs) Which words from the list below describe best the term “sustainability” in the Olympics? (Green, renewable, resourceful, durable, education, SDGs, partnerships, climate action, economic growth, equality, diversity) by *Field cast handbook p. 87 “sustainability goals in the Olympics”*
5. Are you still in touch with the other volunteers? If yes, how?
6. From a scale of 1-10, how sustainable do you think the Olympics were?
7. Tell us one thing that you liked as an example of sustainability in the Tokyo 2020 Olympics?
8. Tell us one thing that could have been better in the Tokyo 2020 Olympics?
9. What new thing would you suggest for the future (Paris 2024) volunteers and organizing committee that should be taken into consideration?
10. Please feel free to add anything else you would like to mention.

Figure 1: How was your overall experience at the Olympics as a volunteer?

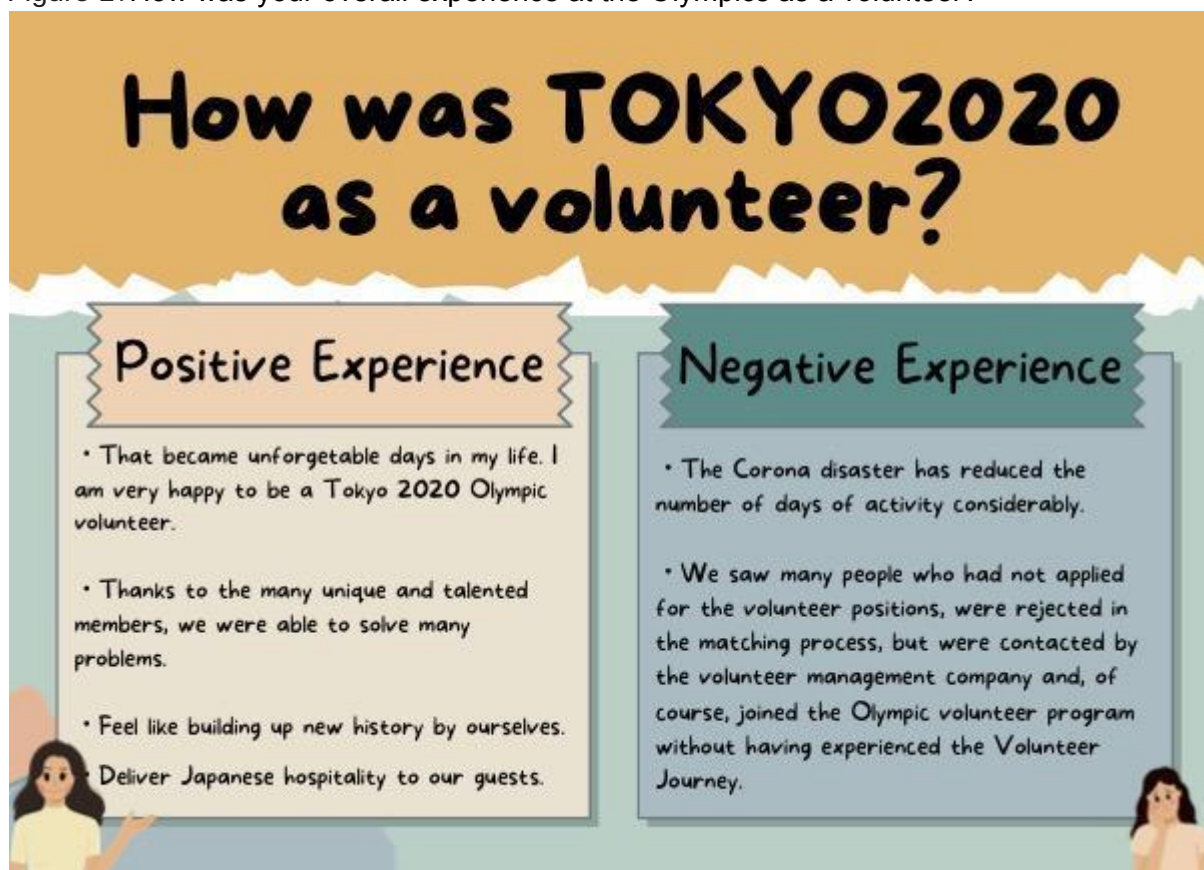


Figure 2: What was the most memorable moment for you?

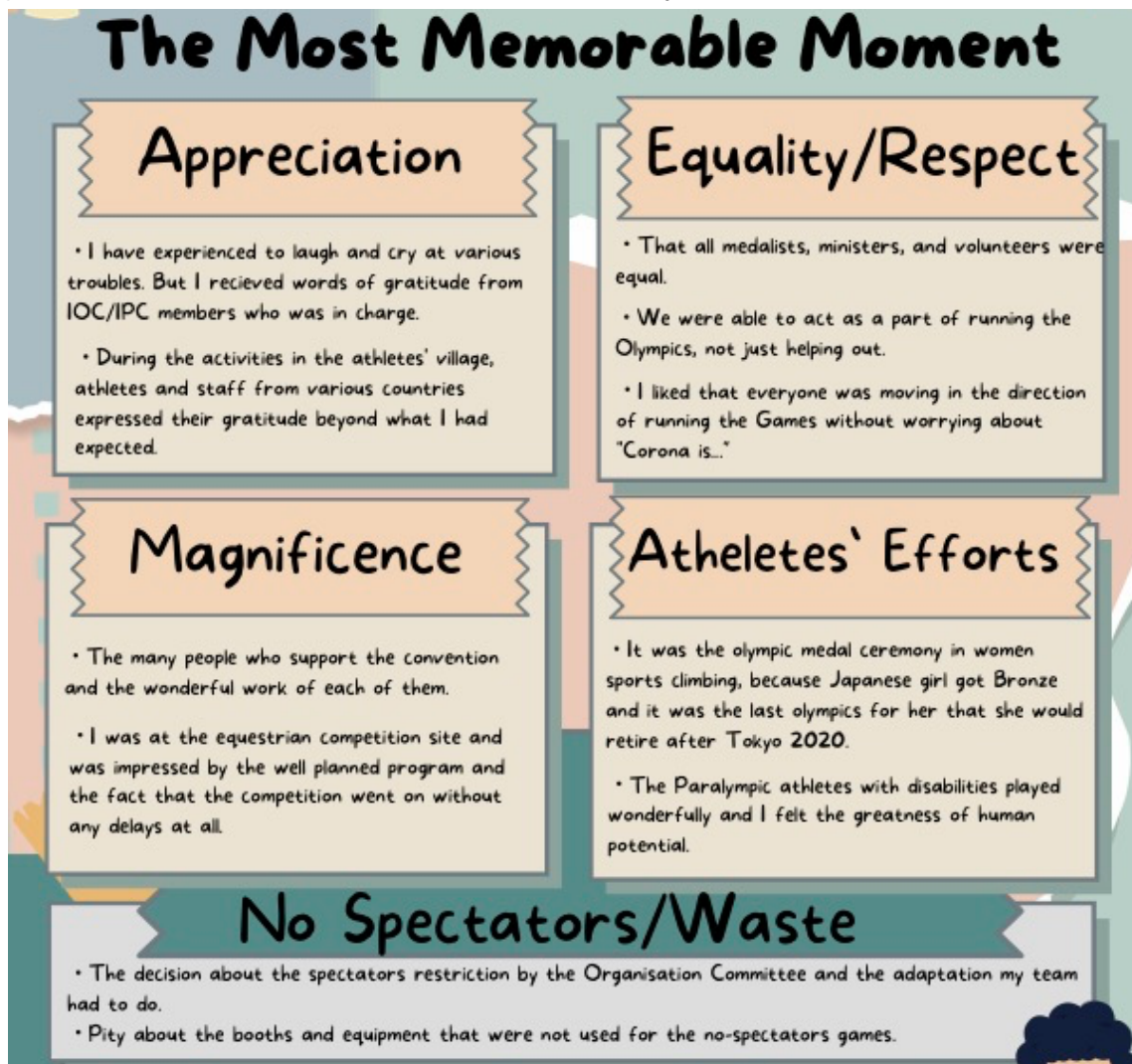


Figure 3: What did you feel like you gained from this volunteering experience?

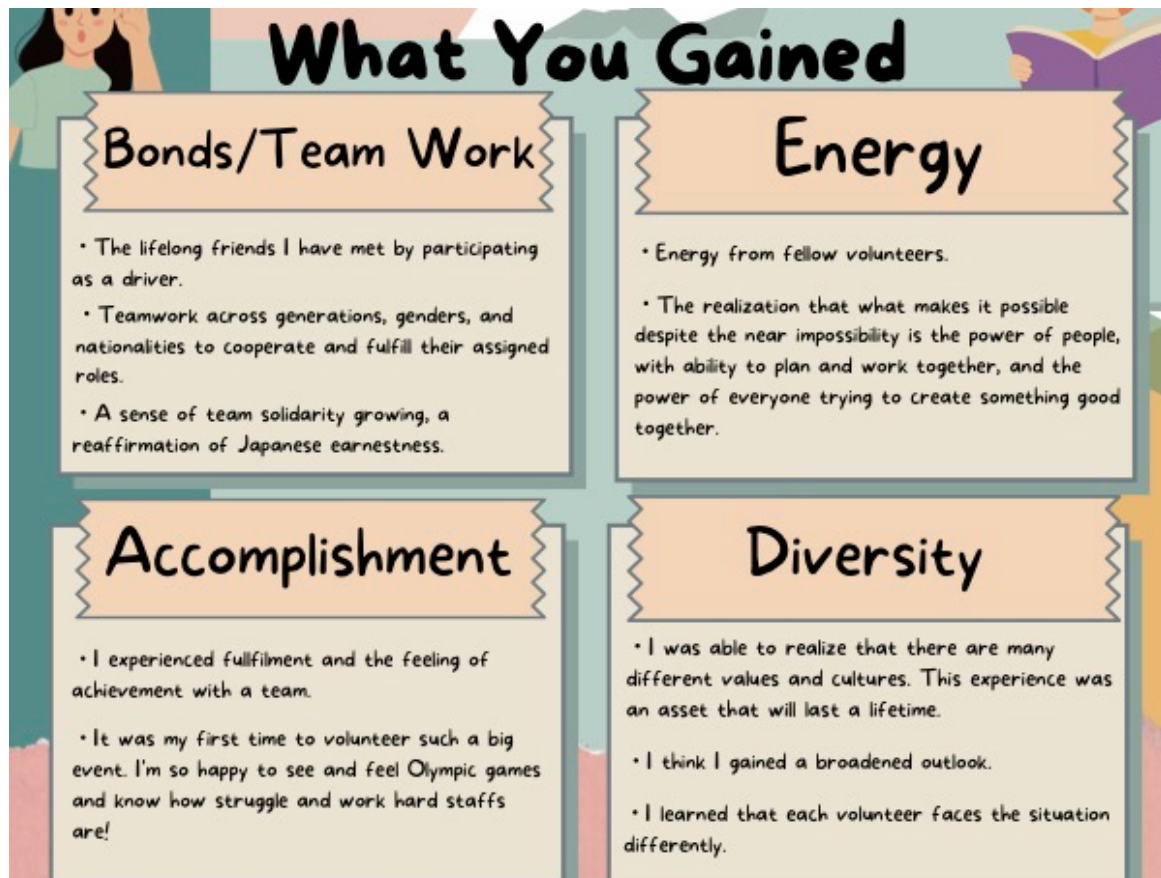
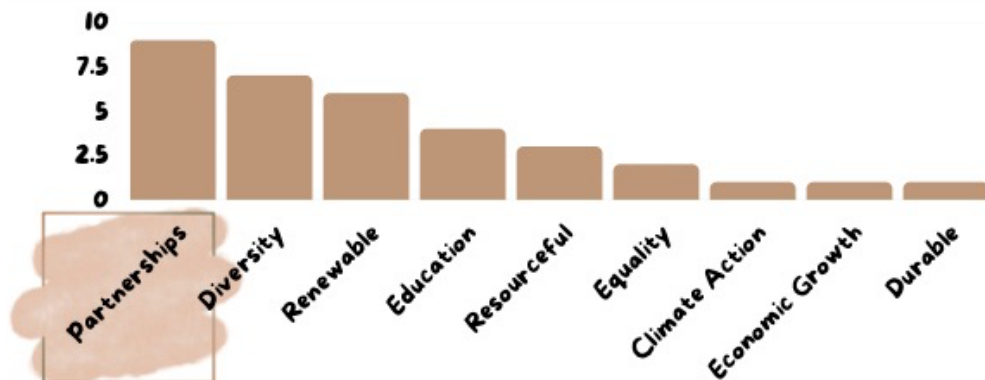


Figure 4: Sustainability of TOKYO 2020-①

SUSTAINABILITY OF TOKYO2020

WHICH WORDS DESCRIBE BEST THE TERM
"SUSTAINABILITY" IN THE OLYMPICS?



ARE YOU STILL IN TOUCH WITH THE
OTHER VOLUNTEERS?



HOW?



We are still belonging to the Facebook group and have some conversations.



We continue to interact through Zoom.



We have communicated by LINE and know the current activities each other.



WHATSAPP GROUP

44%

REUNION AS FRIENDS



Having a party

Watching a baseball game together



Planning events together

31%

VOLUNTEERING



We meet each other as golf volunteers.

We also work together to volunteer at marathons and various athletic events in Japan.



20%

LEARNING LANGUAGE



I am studying English and French online with other volunteers.

We study French so we can volunteer at the next Olympics in Paris.



Figure 5: Sustainability of TOKYO 2020-②

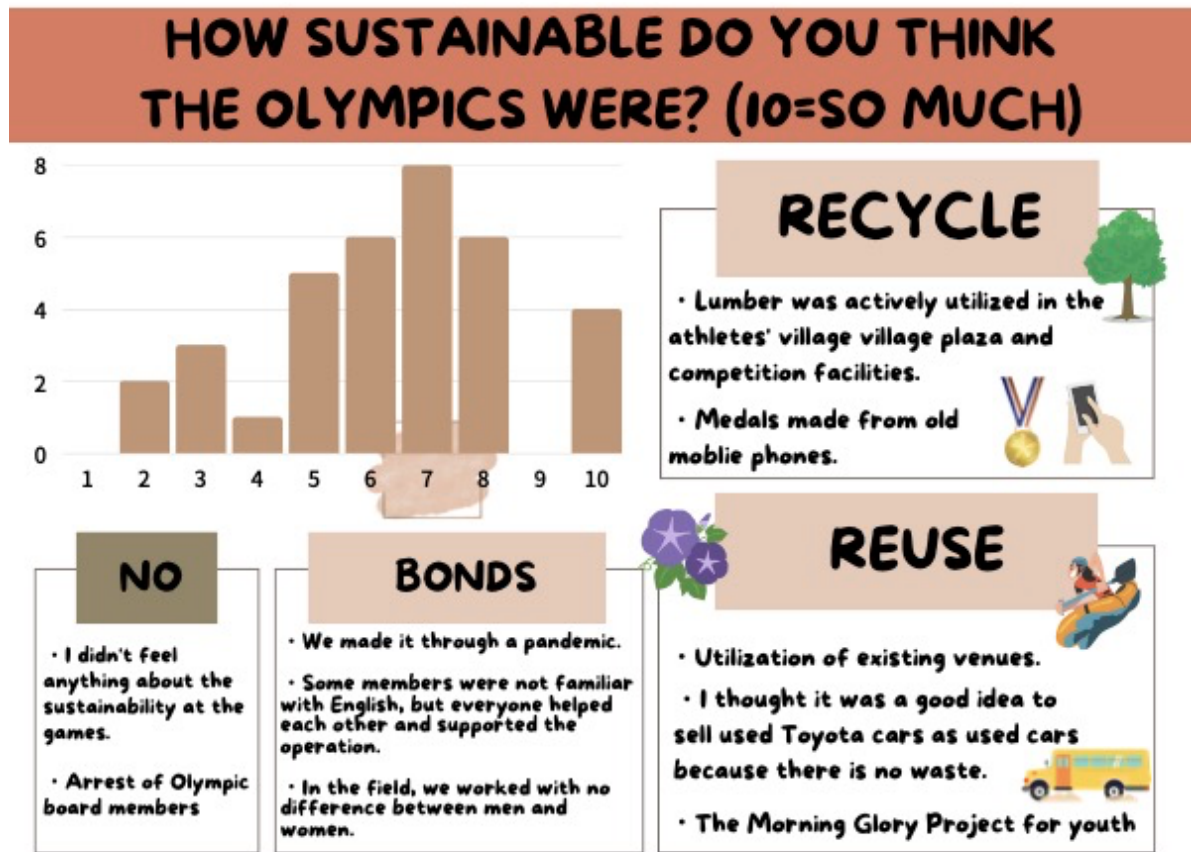


Figure 6: Sustainability for Paris 2024-①

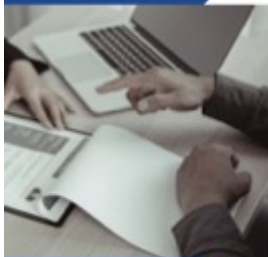
Sustainability for Paris 2024

1. No spectators : Accessibility & Education

- There were activities that lasted from early morning to late at night, making it difficult to get home. We wanted **transportation to operate all day**.
- the Paralympics missed an opportunity to **promote the excellence of sports for people with disabilities, diversity and inclusion to the audience** by watching the Paralympics.
- When wearing a volunteer uniform due to covid19 at first **we were seen with negative eyes**, I was scared to even wear the uniform and get on public transport.



2. Management : Selection Process & Shifts



- Saw **many part time workers** (young and **had same volunteers' uniform on**) from one of the biggest advertising agencies seemed just to hang out at the site chat and watch the games. Even though many volunteers were unable to work.
- There was a website where I could see my shifts, but it did not reflect the changes from the initial proposal. It would have been better **if you had secured personnel capable of handling the operation**.

3. Costs : Uniforms, Food, Goods, and Facilities

- There were **too many uniforms** and too many things we didn't need.
- Because of covid, there were many volunteers who declined and the number of people decreased, so **too many lunch boxes had been ordered and wasted**.
- Don't build **too many new venues and goods just for the Olympics**.
- Keeping the venues from the Olympics, especially for kids as they can experience the new sports they saw at the Olympics.



Figure 6: Sustainability for Paris 2024-①



4. Communication: Strict Rules for our Health

- We **didn't had time to share moments** with Volunteer because of strict rules from Covid-19, would like to spend more time with them sharing a drink, some activities.
- Initially we **were told not to speak at all even to athletes**. But now I think we should have shown our appreciation and encouragement to them.
- **Creating a community** where people can engage with not only their own venues but also other venues, and flexible personnel changes.

5. Transparency in Politics: Bribery and Enforcement

- A year later, **the director of the organizing committee has been caught with a bribe**. It is a real shame that there was a money movement behind all the hard work the volunteers put in. I hope the top management will act with integrity and sportsmanship.
- I think if you are not politically clean, **people will leave**.
- Arrangements of the organizing committee and **conflicts with government officials**





6. Information: Media & Technology

- I believe that volunteers who support the event are an important element in sustainability. **The Olympics are a unique opportunity to show the world the importance of Sustainability.**
- I wish the volunteer spirit was spread out through **more TV exposure**.
- The food was very well catered for, **not as shoddy as the media makes it out to be**, but rather more preferential than the staff!
- Covid situation could have been better handled on video before the Games: Informing the volunteers about the situation and how it will all happen.



Co-funded by the
Erasmus+ Programme
of the European Union

Sport for Sustainable Development project is a collaboration between 5 partners from 3 continents: Europe, Africa and Asia: ENGSO Youth as the coordinator, Hungarian University of Physical Education, Sport and Citizenship, National Olympic Committee of Senegal and Kokushikan University of Japan.

The activities of the project were creation of a training manual for delivering the SDG workshop, training course in Tokyo, Japan, local visibility and dissemination activities, youth exchange in Dakar, Senegal, and a closing seminar in Paris, France.

Learn more: www.sport4sd.com



Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.