YOUPLAY MANUAL FOR GAME FACILITATORS

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1. INTRODUCTION

1.1 Introduction to the manual – what is the tool about?

This *MANUAL FOR GAME FACILITATORS* was conceived and developed as part of the European project "YouPlay - Youth Playful Engagement." The tool is intended to provide a comprehensive overview of the objective**s**, rules, dynamics, functionality, and potential of the board game created as one of the project's primary outcomes.

The developed educational game is intended to **be utilized by youth workers, teacher**s, and staff members of youth organizations during non-formal education activities and workshops. Through the use of this guide, we hope to ensure that the instrument is fully comprehended and utilized to its fullest potential.

Youth workers, facilitators, and **others interested in utilizing this manual associated to the** educational tool will learn how to manage the organization of the game's introductory sessions, the implementation of the game's main sessions, and the management of the final debriefing in order to maximize the impact on participants and beneficiaries.

2. ABOUT THE PROJECT

"YouPlay" is a 24 months' project co-financed by the EU Commission through the European Education and Culture Executive Agency (EACEA) and the ERASMUS + Programme, under the umbrella of its key action 2 (KA2 - Partnership for Cooperation in the field of Education and Training - European NGOs).

The main aim of the project is to strengthen the capacity of youth NGOs to guide and support young people in developing competences, skills and knowledge that would animate their sense of initiative and active citizenship. The project is realized by 7 partners from 6 different countries (TDM 2000 International – Coordinator, Italy; NGO IUVENTA, Serbia; GLOBAL CITIZENS ACADEMY, Lithuania; Dragon Legion, Germany; TDM 2000 Malta, Malta; Universidad Complutense de Madrid, Spain; TDM 2000, Italy.
The Objectives of the project are:
- to support youngsters' development by improving their citizenship skills and fostering them to engage in democratic participation;
- to provide new tools for youth workers, youth organizations and institutions, on how to engage young generations, valorize their contributions and catalyze the social change;
- to spread and foster the debate on the SDGs among EU and by developing concrete proposals for their implementation;

- to strengthen the synergic cooperation of the Network thus supporting the creation of youth policies.
Expected results:
- Educational Board Game on active participation and SDGs; followed by a testing inside and outside the project consortium;
- A platform containing the digital extension of the game and a wide variety of resources for youth and youth workers on active participation
- Policy Recommendation and adaptation Guide that starts a process of transformation on how to promote youth engagement.

3. ABOUT THE GAME

The partnership, through the implementation of the project, explored and expanded the dimension of the game-based learning as a methodology to promote and experience civic participation in youth. In a synergistic view, the project refers to the most advanced studies on games for learning and for democracy, catalyzing in the project the huge potential that they identified. Indeed, the gamification of learning and civic participation can markedly help the decrease of citizen alienation from politics and society in general, as - through its crowdsourcing dimension - individuals could better perceive their role within the community, "outsourcing a job to the crowd", for the common good.

Our Educational Game is a board/card game aimed at fostering young people's active citizenship, at enhancing their integration and inclusion, and at strengthening their contribution to the functioning and development of democratic debate. Not only this, it also aims at empowering the participants to play a vital role in their own development as well as that of their communities putting the emphasis on how important is their action to contribute in achieving the Sustainable Development Goals. The Game was designed to help the young direct beneficiaries to learn vital life-skills, develop knowledge on human rights and citizenship and to promote positive civic action.

The Game is mainly directed to young people, aged 15-30, as we believe that this is the age range when doubts on life, future, trust, capacity, start to arise and consolidate if nothing is done to reverse this tendency.
The Game contains different scenarios where participants have the opportunity to play, debate, make decisions and find solutions. The scenarios offer different card decks connected to:
- 3 Dimensions of Citizenship: civil, political and social
- Sustainable Development Goals
These 2 categories are interconnected in order to transfer to participants the contents and furnish basic knowledge to act as a proactive citizen by participating in the different contexts of society.
The cards' decks include actions that every participant can take and decide to use, each action generates a reaction therefore a consequence will start. This puts the participants in the situation of making a choice, analyzing, deciding and taking responsibility.

The developed printed Game has a digital interface (mobile APP) to help the participants to also play without the facilitation of a youth worker. In fact, even if the Game wants to be a tool to support youth workers in their daily work on youth participation, we strongly believe that it can be played in any settings, among friends, in a non-formal and formal education context. The presence of the "master of the game" or "facilitator" (youth worker) provides a more effective experience to the young players. It explains the situations, the effects of the actions and leads the participants to navigate into the game maximizing their learning.

The web application was designed to work as a support to the physical version of the board game. Social interaction is one of the main and essential parts of the game, and it happens both in a face-to-face setting and using video conferencing tools if played remotely. The digital version replaces the cards and it will have the advantage of introducing random events that can react to the actions of the players.
The web application is barrier free and it is responsive so that it adjusts to the screen size of the viewing device. In particular, it is optimized for mobile phones.

The educational game developed has the following specific **Learning Objectives:**
- fostering cooperation among participants for the sake of a sustainable society and the good of the community;
- provide knowledge about the SDGs and global issues related to them;
- provide knowledge about the governance of a democratic society and stimulate debates on solving public issues.
- stimulate active participation and improve citizenship skills and therefore the ability to act as responsible citizens;
- Equipping participants with competencies:

➢ critical and strategic thinking

➢ teamwork, negotiation and collective decision-making

➢ conflict and crisis management.

4. GAME BASED LEARNING

Game-based learning is an educational trend that has experienced significant growth in both formal and non-formal sectors over the past two decades. The domain of youth work is in the process of maturing but remains in need of further investigation. As it is evident from Table 1, the notion of game-based learning is subdivided into educational games and gamification, the latter of which requires a more in-depth examination. Educational games are categorized into two groups: traditional games, which include card and board games, and video games, which are directly connected to the virtual and digital worlds.

A Typology of Ludification of Education, proposed by Martí-Parreño, Méndez-Ibañez, and Alonso-Arroyo (2016).
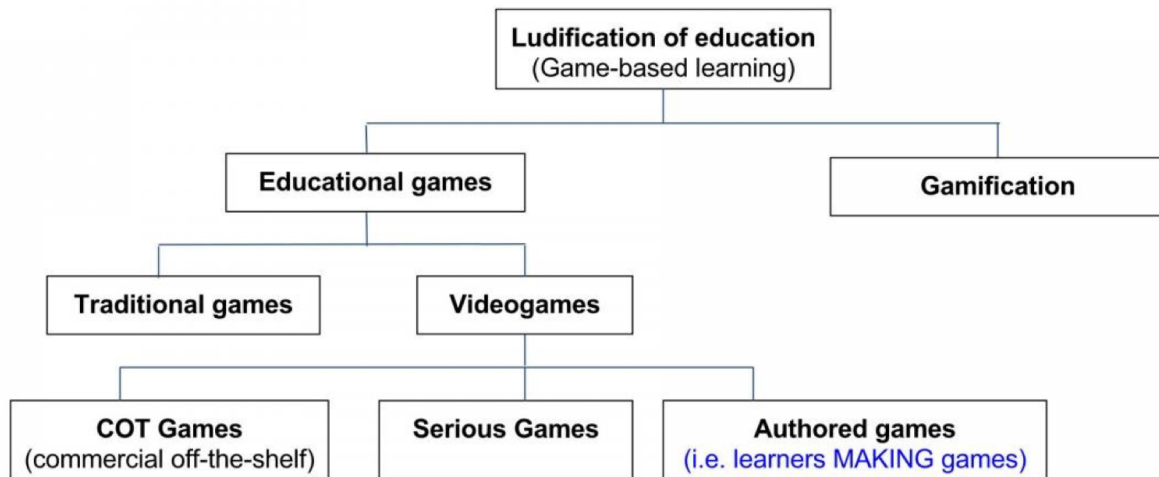
Martí-Parreño, J., Méndez-Ibañez, E., and Alonso-Arroyo, A. (2016). 'The use of gamification in education: a bibliometric and text mining analysis'. *Journal of Computer Assisted Learning.* 32, 663-676

The branching continues with videogames demonstrating various examples that can be discovered.

1) Time-based Circle of Games

2) Serious games: All those games that emphasizes learning

3) Authored games, which are games that are developed entirely by the user during gameplay.

Johan Huizinga, a Dutch expert in language and history devised his own theory regarding game-based learning and the capacity of games to facilitate learning for all individuals. His theory is detailed in the book titled "Homo Ludens". Particularly, he has delineated the qualities that an effective game ought to possess.

The Table below elucidates the distinctions between definitions of what constitutes a game and what does not, a topic Huizinga analyses in his book.

| Figure 2.10 |
On the borders of the classic game model.
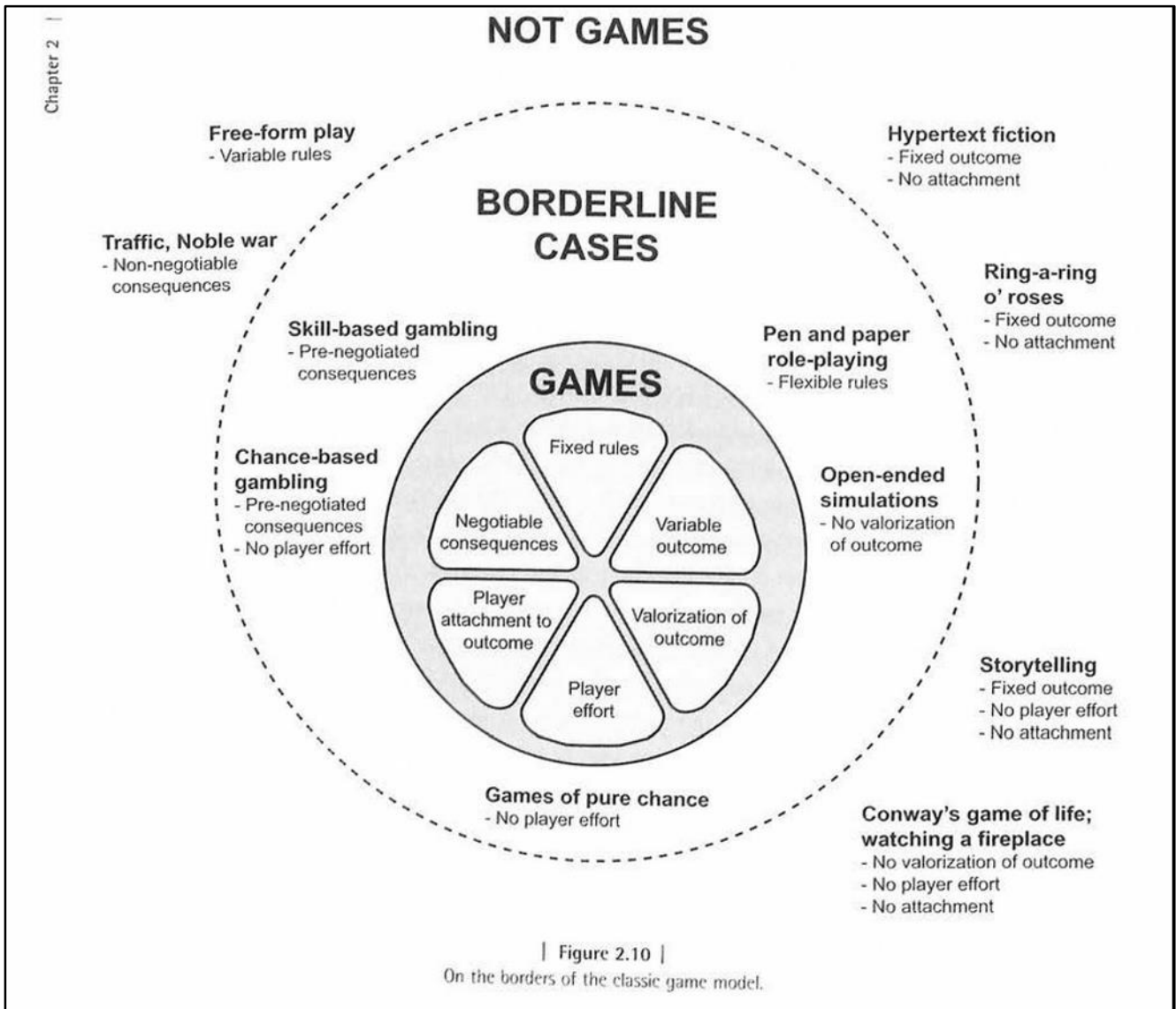
Huizinga identifies 5 characteristics that play must have:

1. Play is free, is in fact freedom
2. Play is not "ordinary" or "real" life
3. Play is distinct from "ordinary" life both as to locality and duration
4. Play creates order, is order
5. Play is connected with no material interest, and no profit can be gained from it.

Youngsters are in constant interaction with one another using both verbal and nonverbal communication skills in game-based teaching and learning. Young people regularly cultivate their

intrapersonal intelligences by means of this interactive procedure. This occurs because the game process fosters the development of self-confidence, self-respect, socialization abilities, and the capacity to value one's own thoughts and those of others.

Throughout the course of the game, participants portray themselves both internally and externally. The procedure of games enables the person to have a solid comprehension of himself or herself, including knowledge of his or her own strengths and weaknesses and how to utilize them to respond to circumstances.

The games process is pragmatic and instantaneous; therefore, it stimulates both the intellect and the emotions. The individuals involved, once more utilizing intrapersonal intelligences. Youngsters express their emotions into each fictitious experience. This expression occurs as a result of what is observable and what is possible.

An essential advantage of game-based learning is that it can facilitate youngsters' increased engagement with their own knowledge.

The progression of the game is contingent on the decisions that the players make. The game gains significance from the careful progression of its actions. In the context of the games, participants are frequently confronted with a variety of decisions concerning the course of the plot. Group deliberation and logical reasoning are typically the means by which participants reach the most suitable decisions.

Today, the Internet and technology provide a language of cooperation and mutual understanding, and if used properly, digital work for youth can contribute greatly to informal education for young people. The debate about the cultural role of technology leads to different understandings of the usefulness of the Internet, but there is no doubt that technology can play an important role in our digital culture, refers to the widespread accessibility, interactivity, and connectivity that characterize today's Internet. Furthermore, each digital tool, as a tool, can be put to a variety of uses, in a number of possible contexts, and by youth workers, through its ability to with its creativity, it can reach and attract young people by acting as an important factor in disease prevention and different forms of social exclusion.

Game-based learning has become a powerful tool, providing a dynamic and engaging approach to young people's education and personal development. Through GBL (game based learning) young people can learn with fun, increase their motivation and be at the center of their growth; there's no age to play and also youth workers, educators and trainers will love it as a methodology to apply with young people.
Youth work must therefore address today's educational challenges and adapt the learning process to the needs and profiles of young people through the use of games and game-based learning digital.
While digital game-based learning provides a balance between lessons and educational play, gamification involves taking elements from games, such as levels or scores, and adding them to the lesson. The main idea is to make lessons that may not be interesting more attractive for young people.

Games and gamification can be used to increase the motivation of individuals participating in youth work activities. So-called "game elements" can be points, achievements, badges, and leaderboards. Basically, they are used as extrinsic motivational tools in traditional classroom activities.

The line between GBL and gamification is sometimes very thin; the elements of gamification are normally present in a GBL activity, not vice versa. GBL usually includes a game-like environment and practice of the learning content through activities like theater and role play.

In GBL, the learning process comes as a result of playing the game. Gamification, instead, is about inserting some elements of a game into traditional activities.

Why Game-Based Learning Matters in Youth Work:
- Engagement and Motivation
- Skill Development
- Personalized Learning
- Social Interaction

- Engagement and Motivation: One of the most significant challenges in youth work is keeping young people engaged and motivated. Traditional teaching methods often fall short in this regard. Game-based learning, on the other hand, capitalizes on the intrinsic motivation that games naturally evoke. Young people willingly immerse themselves in games, making learning an enjoyable and fulfilling experience.

- Skill Development: Youth work is not just about academic learning; it's also about nurturing life skills. Games provide a holistic approach to skill development, encompassing problem-solving, critical thinking, teamwork, communication, and adaptability. These skills are essential for personal growth and future success.

- Personalized Learning: Every young person is unique, and game-based learning can be tailored to individual needs. It allows youth workers to create customized experiences that meet specific goals and learning styles. This personalized approach fosters a sense of empowerment, as young people have a say in their own learning journey.

- Social Interaction: Games often involve collaboration and competition, encouraging healthy social interaction. This is particularly important in the digital age, where screen time can be isolating. Youth workers can leverage games to build relationships, enhance communication, and promote a sense of community among young people.

We believe that Game-based learning is a powerful tool to engage and educate young people about the Sustainable Development Goals - SDGs. By combining interactive gameplay with real-world problems, young people can become informed, empowered and enthusiastic participants in the journey towards a sustainable and equitable future fair for everyone.

Game-based learning not only improves youth engagement but also plays an important role in promoting the understanding and youth engagement needed to achieve the SDGs.

Therefore, GBL can also be used to encourage better social and cultural understanding between people and reduce isolation, they can encourage personal reflection and promote positive group work. Most importantly, learning games should empower players to push the learning boundaries as further as possible. We hope that our created Game - Sustainable City will do as well.

5. SUSTAINABILITY, SUSTAINABLE COMMUNITIES AND YOUNG PEOPLE

Sustainability – definition and preconditions to achieve it.

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." It is a multifaceted concept that integrates economic, social, and environmental dimensions to ensure the well-being of current and future generations. Sustainability recognizes the interconnectedness of global systems and seeks to address challenges such as poverty, inequality, climate change, and environmental degradation holistically. At its essence, sustainable development aims to balance meeting human needs and safeguarding natural resources, thereby promoting resilience, equity, and prosperity over the long term.

To tackle the above-mentioned issues that society is facing today, world leaders came up with an agreement that will help foster the sustainable development of our planet. In September 2015, the General Assembly of the United Nations adopted the 2030 Agenda for Sustainable Development, also known as Sustainable Development Goals (SDGs). This agenda is applicable in every country and aims to mobilise efforts to end all forms of poverty, fight inequalities and tackle climate change while ensuring that no one is left behind. The Agenda includes 17 goals with 169 associated targets that address major social, economic and environmental challenges of today's world. It is built on 5Ps:

- People – the SDGs aim to end poverty and hunger and to ensure that all people can fulfil their potential in dignity and equality and in a healthy environment.
- Planet—the SDGs stand for protecting our planet from degradation through sustainable consumption and production, sustainable management of natural resources, and urgent action on climate change.
- Prosperity – the SDGs are meant to ensure that all human beings can enjoy prosperous and fulfilling lives and that economic, social and technological progress occurs in harmony with nature.
- Peace – the SDGs aim to foster peaceful, just and inclusive societies which are free from fear and violence. Sustainable development is not possible without peace, and peace is not possible without sustainable development!
- Partnership – the SDG Agenda calls all stakeholders to mobilize their efforts towards achieving the targets of the SDGs, based on a spirit of strengthened global solidarity, focused in particular on the needs of the poorest and most vulnerable and with the participation of all countries, all stakeholders and all people.

Achieving the SDGs is the joint responsibility of everyone: governments, businesses, and civil society. Every person also plays an important role in implementing Agenda 2030. Individual habits, behaviors, and actions affect people and the planet; therefore, we need every human being to act in society as active and responsible citizens.

Sustainable community – key characteristics
Within the sustainable development framework, sustainable communities emerge as one of the fundamental building blocks. Sustainable communities are envisioned as places where people can live, work, and thrive harmoniously with their surroundings. These communities prioritize the equitable distribution of resources, access to essential services, and the preservation of cultural heritage and biodiversity. By integrating sustainability principles into urban planning, infrastructure development, and community engagement, sustainable communities strive to create environments that enhance quality of life while minimizing negative environmental impacts.
What is the difference between sustainable and unsustainable communities? Here are the key characteristics that define them:

Sustainable community	Unsustainable community

The priority is given to the quality of life and future prospects	The priority is given to consumption and economic growth
Effective use of resources and waste reduction	Ineffective use of resources, a high amount of waste
The pollution is reduced so that it does not make harm to the environment and human health	Pollution poses a threat to human health and harms to the natural systems
The human health is protected by developing a safe, clean environment and providing health services focused on prevention	The health conditions of people are unsatisfactory; the health services give priority to avoiding symptoms
The diversity in nature is valued and protected	The diversity of nature is not valued and protected
Community needs are met by using local resources	The needs of the community are met by imported cheap goods
Everyone in the community is supplied with cost-effective and quality food, water, shelter and energy	Quality food, water, shelter and energy are expensive
Everyone has the possibility to have a job that they like	Many people are unemployed or have low-skilled and low-paid jobs without the possibility for self-expression
Well-developed public transportation	Public transportation is abandoned and expensive; the safest and easiest way is using private transport
People do not feel threatened by crime and are not afraid of persecution because of their race, beliefs, gender, etc.	High criminal risk, people often become victims of political or sexual violence

Every person can gain the knowledge and skills necessary for them as full members of society	Low quality of education
All people can participate in making the decisions that are important for the community	The real power is held in the hands of some groups that do not represent the interests of the society
Everyone has equal rights to meet their cultural and recreational needs without making harm to the environment	Only rich people can access recreational services

The role of young people

Young people play a particularly significant role among the key stakeholders driving sustainable development and the creation of sustainable communities. Empowered with energy, enthusiasm, and a commitment to change, young individuals possess a unique capacity to drive innovation, challenge the status quo, and advocate for transformative action. Their consciousness, social awareness, and motivation to embrace new ideas make them indispensable agents of positive change in today's rapidly evolving world.

Engaging young people in sustainable development entails providing them with opportunities for education, skills development, and meaningful participation in decision-making processes. By fostering a culture of inclusivity and collaboration, communities can tap into the creativity and ingenuity of youth to address pressing sustainability challenges. Whether through youth-led initiatives, social entrepreneurship, or activism, young people contribute fresh perspectives, innovative solutions, and a sense of urgency to pursuing sustainability goals.

6. RULES OF THE GAME
6.1 Elements of the Game

OVERVIEW

"SOVERANA - Running a sustainable city" is an educational and cooperative board game for six players, where victory can be achieved by working as a team.

LEARNING OBJECTIVES
- fostering cooperation among participants for the sake of a sustainable society and the good of the community.
- provide knowledge about the SDGs and global issues related to them
- provide knowledge about the governance of a democratic society and stimulate debates on

solving public issues.
- Stimulate active participation and improve citizenship skills and therefore the ability to act as responsible citizens
- Equipping participants with competencies:

  ➢ critical and strategic thinking
  ➢ teamwork, negotiation and collective decision-making
  ➢ conflict and crisis management

GAME DURATION
90 minutes

GROUP SIZE
Game is designed for 6 players. Ideally it is played with a facilitator, but it can as well be played without.

GAME COMPONENTS:
- Board
- 6 Figures and 1 dice
- 20 locations (round card)
- 6 departments cards
- 33 Mission Cards
- 53 Major Event cards
- 36 Minor events Cards
- 80 Votes' cards
- 100 Resource Tokens

- Mobile application (the game can be played with or without the support of the mobile APP)

GAME COMPONENT BREAKDOWN

BOARD
The Board represents an imaginary city with 20 different locations.
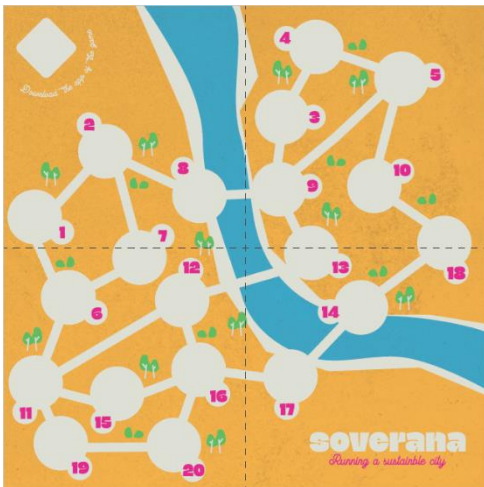
FIGURES AND DICE
To play the game you will need 6 figures in different colors; each figure corresponds to one of the city departments (the same color of the figures is shown on the corresponding department's cards and on the related locations). The dice is a standard 6 sided one. The dice is needed just at the beginning of the game to elect the mayor and during the game just in case, after the vote of confidence deciding for a new mayor' election, there is a situation when two or more players have the same number of votes' cards.

LOCATION CARDS
20 locations (round cards) - location cards should be randomly placed on the board in the designated places identified with the 20 numbers.
Location cards have 2 sides. One side is colored and the other side is in black and white.

Colored side represents that the location is in Active Mode

Black and white side represents that the location is in Crisis Mode

The **20 locations** are: Press and Media Center, Stock Exchange, Public Transit Authority, Electrical Substation, Police Station, Fire Station, Sewage Plant, Recycling Plant, Train station, Shopping Mall, Courthouse, Community Garden, Business Park, Hospital, Youth Center, University, Sports Complex, Social Service, Cultural Hub, City Hall
18 locations belong to 6 departments. Two locations are independent; Press and Media Center and City Hall.

6 DEPARTMENTS CARDS
Department cards represent the 6 city departments. On each card you will find a short explanation for the department and for which locations this department is in charge.
Departments are: ECONOMY, EDUCATION, ENERGY AND ENVIRONMENT, HEALTH AND WELFARE, JUSTICE AND SAFETY, URBAN DEVELOPMENT.
During the game each player will be assigned a city department, holding the position of the city manager in charge for the department.
Each department is in charge of 3 locations. Specific colors identify the departments, related locations and figures representing the players in charge of each department.
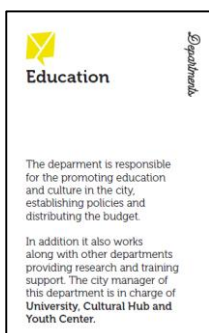
Explanation of each Department:

ECONOMY - This department is responsible for delivering support and services towards the companies, contractors and workers in the city, as well as for its sustainable economic development. In addition, it is responsible for the fundraising to ensure local policies. The city manager of this department is in charge of the Stock Exchange, the Business Park and the Shopping Mall.

EDUCATION - The department is responsible for promoting education and culture in the city, establishing policies and distributing the budget. In addition, it also works along with other departments providing research and training support. The city manager of this department is in charge of the University, Cultural Hub and Youth Centre.

ENERGY AND ENVIRONMENT - This department is responsible for the production and distribution of energy in the city, as well as for the maintenance of the infrastructures needed for this task. In addition, it is responsible for the environmental sustainability of the city, and the protection of wild and sea life. The city manager of this department is in charge of the Sewage Plant, the Electrical Substation and the Recycling Plant.

HEALTH AND WELFARE - The department is responsible for the wellbeing, health and social services of the city. According to the city's council budget, it allocates resources and establishes policies around issues such as equality, diversity and physical and mental. The city manager of this department of health and welfare. The city manager of this department is in charge of the Hospital, Social Services Centre and the Sports Complex.

JUSTICE AND SAFETY - This department is responsible for guaranteeing safety for all citizens, as well as for assuring the rule of law. It ensures physical and social safety, and in cooperation with other departments it works towards preventing both environmental and social threats and coexistence problems. The city manager of this department is in charge of the Court, the Fire Station and the Police Station.

URBAN DEVELOPMENT - This department is responsible for the logistics and transport, ensuring the sustainable development of the city by providing the essential infrastructures for the adequate advancement of social life. This city manager is in charge of the Public Transport Authority, the Train Station and the Community Gardens.

MISSION CARDS
Each mission includes different tasks that players must fulfill in order to collect votes' cards and in this way have the chance to be City Mayor, or at the end to win the game.

Missions

Meet with the City manager in charge of the Department of Urban Development either in this round or in the next round*.

You have important business to discuss, but the Education manager is really hard to meet.

*If you are the Urban Development manager, go instead to the City Hall either in this round or in the next.

Award: 3 Packages of Votes

MAJOR EVENT CARDS

Major events cards are the ones that show events which are happening and that influence the city. Each event affects some locations in the city by putting them in Crisis Mode. At each card you will find a description of the event, which location is affected (which location players must put in Crisis Mode) and how much each department must pay.

Major event is always a negative event.

At the start of each round, the mayor will take one of these cards.

Each event in these cards is related to one of the 17 SDGs; In the additional deck of cards "Real facts", related to Major events, there are real info and statistics to be read by the players. The information provided is connected to the SDGs topics covered with the card.

MINOR EVENT CARDS

Minor event cards describe some minor events which happen in the city. Minor events can be positive and negative. Minor event cards always follow Major Event cards.

University Protests

Young people are protesting at the university for qualitative education.

Any player could decide to go straight to the university and pay 2 resources from their department to sort out the problem.

If not sorted out:
Education -2

VOTES CARDS

Every player, as a city councilor recently elected, receives at the beginning of the game a "votes' card". Every time a player will fix a location in crisis mode, they will immediately get a votes' card. If at the end of one round all the three locations related to the department the player is responsible for are in "active mode", the player receives an additional votes' card. At the end of the game, the player with the highest number of votes' cards will be the winner.

In case after a vote of confidence a new mayor has to be elected, the player with the highest number of votes' cards will be the mayor.

RESOURCE TOKENS

A prefixed amount of resources (represented by coins/fiches) is assigned at the beginning of the game to each department. At the beginning of each round, a number of resources equal to the locations in active mode is divided by the mayor to the 6 departments.

6.2 Summary and flow of the Game's rounds

The game is divided into 5 ROUNDS. Each round includes all players having a turn.
Standard Round:
1. Mission Card
2. Major Event Card
3. Minor Event Cards
4. Moving
5. Distribution of Resources
6. Vote of Confidence
7. Finishing the round

6.3 How to play the game? Step by step Rules explanation

PREPARATION FOR THE FACILITATOR
Read the instructions to familiarize yourself with the rules of the game and cards.
Familiarize yourself with Sustainable Development Goals.

PREPARATION FOR THE GAME:
- Place the game board on the table

- Set the board by putting randomly all locations in Active Mode (colored side)

- Put game figures randomly on the locations (you cannot put any figure at privilege locations - City Hall, Public Transit Authority and Stock Exchange)

- Place the Mission Cards, Major Event Cards + deck of real facts, Minor Events Cards, alongside the board (face down). Place as well on the table the deck of votes' cards and the 6 departments' cards (face up)

- Give the players Game rules and some time to read instructions. Be ready to give them more explanation on how to play the game.

HOW TO PLAY, STEP BY STEP INSTRUCTIONS

- Choose the City Mayor - Players need to roll the dice and select the City Mayor according to the highest score.

- The City Mayor assigns the players with their city departments with the respective resources and one votes' card. The color of the figures representing the players is set according to the color of the departments' cards

- For the first round the Resources are distributed to the departments as follows:

  - *Education* - 7
  - *Health & Welfare* - 6
  - *Economy* - 6
  - *Justice* - 5
  - *Urban Development* - 6
  - *Energy & Environment Protection* - 7

- **Mission card** – Each player draws one Mission card. The information written on the card is secret and should not be disclosed to the other players. The mission is personal; each player

has a mission that could be similar or completely different to the others. At the end of each round the players should declare whether they have completed or not their missions. Once a player achieves the mission and proves it to the rest of the players – they get the number of votes' cards indicated in the mission card (1,2,3 or 4 cards), the player is then entitled to get a new mission card. **Please note:** The decision to focus on accomplishing the secret mission or cooperating instead with the rest of the players to fix the common issues is left to each player, according to the strategy they would like to adopt while playing the game.

- **Major Event Card** - Once all players have their own mission card, the Mayor will turn over the one Major Event. Read the card aloud and follow the instructions on the card.
  Every location which goes in crisis mode needs to be turned over (showing the picture in black and white with a crossing line). *Locations that are already in crisis mode just remain that way.* Each department which is mentioned on the card must pay an amount requested to be paid. The players should also read aloud the real facts written in the dedicated deck (each major event card has a related card with real facts).

- **Minor Event Cards -** The Mayor will turn over 2 Minor Event Cards one by one and follow the instructions on the cards.

- **Pay attention to the special location effects and its privilege:**

  - **City Hall** - If one city manager is standing in the city hall, you only need one city manager to fix the location in crisis mode.
  - **Public Transit Authority** - If one city manager is standing in the Public Transit Authority, you can move two steps.
  - **Stock Exchange** - get 2 extra resources when a city manager is present at the time of resource distribution

(Privilege of Special locations applies immediately/instantly when one player stays on location and fixes it. In this way players are motivated to first plan the strategy of movement for each player before someone moves in order to get more benefits and possibility to fix more crisis locations.)

- **Moving -** Players start to move after turning over 2 Minor Event Cards and following the instructions on them. Before moving, players will have time to first plan the strategy of movement for each player before someone moves in order to get more benefits and possibility to fix more crisis locations. They will have time to discuss and agree who will move first, how they will move, which locations they want to fix, etc. When it will be the time of moving for a player, they can decide for themselves whether to follow what was agreed upon in the initial discussion or change their mind at the last, following another strategy, perhaps more focused on fulfilling the personal mission written in the mission card.

Players can choose the order in which they move.
Every player can make one move between connected locations.

- **How to fix a location which is in Crisis Mode?**

  - Whenever two city managers are meeting at a location in crisis mode (turned over to the black and white side), they can fix the crisis and turn it back to the colored side (Active mode).
  - If one city manager is standing in the city hall, only one city manager is needed to fix the location in crisis mode.
  - Every time a location in crisis mode is fixed by a city manager, they get immediately a votes' card

- **Distribution of Resources -** When all players finish their movements the mayor gets to distribute to different city departments **as many resources** as there are **locations that are not in crisis mode** (for example: 14 locations are not in crisis mode - city mayor is distributing 14 resources; maximum level of resources is 20 per each round). Some events and the stock exchange might provide additional resources for department distributions. It is up to the City Mayor how much he/she will give to each department.

- **Distribution of Votes cards for city managers**
  - City mayor will distribute 1 Votes' card for each city manager who manages to prevent all the 3 locations from their department from being in crisis mode (to be done at the end of the round).

Important - Each city manager is responsible for maintaining the department with at least 3 resources. If your level of resources drops below 3 the city manager in charge of the department needs to put locations into crisis mode. (to be checked and done after the distribution of votes' cards at the end of the round).

Level 2 - 2 resources	Level 1 - 1 resource	level 0 - 0 resource
1 locations in crisis mode	2 locations in crisis mode	all locations in crisis mode.

Vote of Confidence

At the end of each round and after distribution of resources the city managers cast a vote of confidence for the mayor. If the majority votes "NO" - **The person with the highest number of votes cards becomes a mayor.** This player stays mayor until losing the confidence of the vote. When the vote ends in a tie, the mayor will be decided by rolling the dice.

Every time the mayor loses a vote of confidence each city manager needs to pay 2 resources due to the expensive cost of election.

Finishing the game/Winning

- *The game is finished after 5 rounds*

    1. If more than 10 of locations are in CRISIS MODE at the end of one of the 5 rounds the game ends (None winning)
    2. If more than 18 locations are in OPERATING MODE at the end of one of the 5 rounds the game ends (Team wins)
    3. The player with the highest number of votes cards is the winner (Both in case the game successfully ends before or after the 5th round)

Special location effects and privilege:
All special locations lose their effect when they are in crisis mode (turned over).

| stock exchange	city hall:	public transit authority:
get 2 extra resources when a city manager is present at the time of resource distribution.	**you can fix a location in crisis mode with only 1 city manager if a city manager is standing in the city hall.**	**While a city manager is standing on this location, all city managers can double their moves. They cannot, however, stop at a location, do an action and move again.**

6.4 Structure, Elements and Functioning of the Game digital APPLICATION

This paragraph outlines the functions and screens that need to be created in the app. The mobile App is thought as an additional tool to speed up and facilitate determined processes of the game; the tool is intended to be integrated in the game session that anyway should be played physically.

The app-part of the board game will be handled on one single device shared by all players. The application supports the players in their game and manages as many aspects of the board game as possible on its own to take away as much work as possible from the players.

In the initial page, clicking on "options", players can set the music volume; the app has been structured foreseeing the possibility in the future the translation of the content in other languages which could be selected in this section.
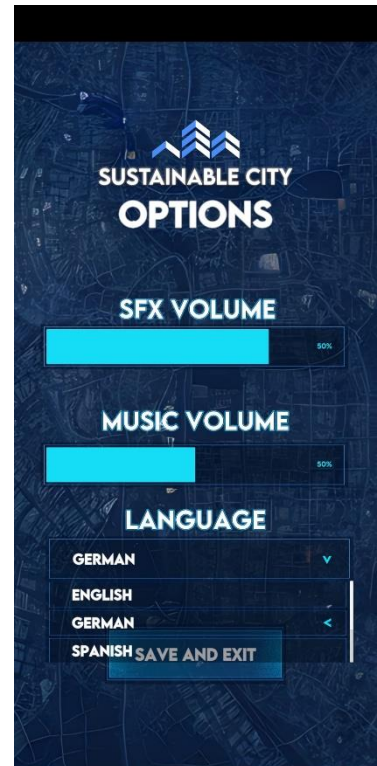
Enter player names (up to six players allowed)

The APP will show an introduction text and allow the players to continue. Give the players a hint that everyone needs to draw a mission card.
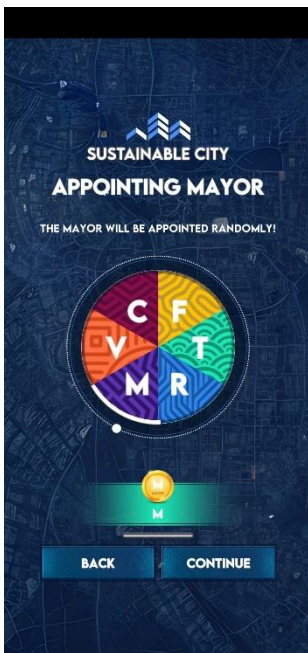
Randomly appoint a mayor and show who is the mayor to the rest of the players. The mayor decides who is in charge of which department
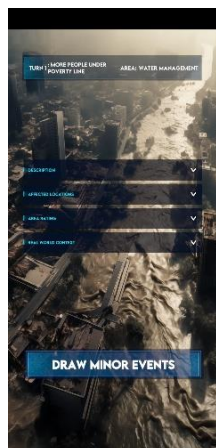
Show slot for each of the six department

Show player items (with names)

Mayor can drag and drop the items into the slots

Mayor can click "Continue" to proceed to the main game loop

The Game Loop

1: A major event gets drawn by the mayor player from a stack

The players see the description of the event card
The players see the affected locations
The players see a linked context to real world examples

2: Minor events take place (up to several events possible)

The players see the description of the event card

The players see affected locations based on conditions given to the players

3: The players can now use their figures while they see the screen with its events and conditions

4: The players now check off the locations which are not in crisis mode anymore and submit the list, after they solved the problems

5: The mayor gets to distribute the resources

The departments are listed and the mayor gets to see the unspent points and can click + or - buttons

6: The players vote if they want a new mayor. If they do so, a new mayor will be elected randomly

As explained in the previous paragraphs, there are 5 rounds to be played for each game session.

Background Functionality:

As some of the major event cards are very severe, the app categorizes them in 3 categories. At the beginning the lowest category of event cards will be selected, later the more severe categories

Based on the ratings the app will directly clarify which locations are affected. The rating is being saved and tracked by the app automatically (not visible to the players)

Players need to get an overview of votes spent. The app clearly highlights here who can currently see the concurrent view

The amount of minor event cards given to the players in addition to the major event cards is determined based on the current game progress. The minimum amount is 1.

6.5 Optional/alternative rules

During the game's testing phase, the partnership agreed on a set of alternative and optional rules that could be applied to the different game session phases in order to give greater emphasis to certain dynamics the facilitators wish to emphasize in order to prioritize the development of certain soft skills among the young participants.

1. At the beginning of the game all Players must roll the dice to elect the city mayor according to the highest score. An alternative method for selecting the mayor could consist of requiring all candidates to make a 30-second to one-minute speech in which they attempt to persuade the other players to vote for them. The mayor is then elected by the players. This dynamic is addressed to let the participants get into the role they will play during the game, testing and developing their public speaking and communication skills while summing up their ideas about how a sustainable community should be.

2. The same dynamic described in the previous paragraph could be observed asking the newly elected mayor to assign the departments to the other players based on a brief speech in which they explain why they are the best option to lead a particular department.

3. At the beginning of the game the resources are distributed to the departments as follows:

- Education - 7
- Health & Welfare - 6
- Economy - 6
- Justice - 5
- Urban Development - 6
- Energy & Environment Protection – 7

Depending on the time available to implement the session, the facilitator could instead request that the "Municipality Councilors" debate the priorities of a sustainable city and democratically determine how to allocate a total of 37 resources among the six departments. This will allow the session to concentrate more on negotiation skills, effective communication, and the ability to present one's position persuasively.

The initial distribution of resources to the six departments could be also determined by the facilitator, based on the actual proportion of resources assigned by the municipality to its real key departments, in order to make the initial scenario more realistic and closely tied to the community in which the players reside. During the final debriefing at the conclusion of the game, this specific element could be explained, analyzed, and debated.

4. If a motion of no confidence against the mayor is voted by the players during the game, the new election could be conducted using the dice, as in the first election, rather than electing the player with the most "votes" cards as the new Mayor. This would increase the excitement of the game and eliminate the prospect that the players will not present the motion of no-confidence to the actual mayor because they already know who the next mayor will be (the player with the highest number of votes' cards).

5. The order in which the "pawns/figures" representing the players move can be determined in different ways:
- Let the participants democratically determine who will move first and in what order the other players will follow. This will offer them more freedom to determine the optimal strategy for repairing locations in crisis mode, thereby encouraging them to develop their analytic and strategic abilities. Nonetheless, it should be considered that this procedure could be time-consuming and that the supervision of the facilitator may be required to prevent the game from becoming stalled.
- After establishing a common strategy through debate, it could be decided that the mayor will move first, followed by the other players in clockwise order. This will increase the responsibilities of the mayor.
- The order of movement could be determined using the dice, with the participant who rolls the highest number moving first. This aspect will increase uncertainty by introducing a random, fate-based element into the game.

The game's design allows players to implement nearly infinite variations. Once familiar with it, the

facilitators could apply additional variations based on the specific requirements and needs of the planned educational session (time available, specific skills to focus on, specific topics to discuss via the creation of customized event cards, etc.).

7. RECOMMENDATIONS, TIPS AND ADVICES

The educational game developed was designed to be used during non-formal education sessions aimed at young people, with the purpose to stimulate their critical thinking and sensitivity to the issues of sustainable development and active participation. The tool also aims to stimulate young people's interest in and knowledge of the Sustainable Development Goals by treating the topic in a dynamic, interactive and playful way. Although the tool created lends itself to be used in multiple contexts, in order to achieve the most relevant positive impact, it should be used during a non-formal education workshop day with youth beneficiaries and composed of the following sessions:

1. Introductory session, ice breaking activities and getting to know the workshop participants.
2. The theme of sustainable development, the 17 UN goals (presentation and analysis), the 2030 Agenda for Sustainable Development, origin, context and purpose
3. Energizer activity on sustainable development
4. Introduction to the game: context in which it was created, characteristics and purpose
5. Explanation of rules and Game session
Be sure to mention that every "Major event card" of the game is related to one of the 17 Sustainable Development Goals, and the information on the bottom of the card are real facts and statistics.
The explanation of the game's rules should be done step by step while letting the players familiarize themselves with the game elements. Up to two trial rounds could be necessary to let the participants fully understand the whole game's dynamic and rules.
According to the age and familiarity with board games of the young participants, the rules could be simplified by the facilitator, adapting the session and applying only the basic rules of the game. A full and detailed knowledge of the tool by the facilitator is requested in order to properly lead the game session and maximize its impact.
6. Debriefing session
This last session takes on special significance in the perspective of the understanding by the participants of the dynamics experienced during the game and the main learning elements.

End the workshop with a Final evaluation - A phase where the participants are asked to assess the entire workshop, useful for educators and facilitators to better understand strengths and weaknesses of the activities proposed.

8. DEBRIEFING PROCESS

The Debriefing session is supposed to be implemented at the end of the workshop, after the

introduction of the main concept of the Sustainable Development Goals and the main game session. This phase, carried out by a youth worker/facilitator should lead the participants to reflect on the previous activity, debate on the different happenings, behaviors of the players and dynamics of the game.

Have all the participants sitting preferably in a circle, try to create a comfortable environment where everyone feels safe and free to express feelings and thoughts.

Start the session asking the participants how they feel after the game session and if they enjoyed it, let them express their impressions, feelings and thoughts. Write on the board the following statements:

1. I want to remember…
2. What I learned today…
3. One word to sum up what I learned today…
4. Something I already knew…
5. I am still confused about…
6. An "aha" moment that I had today is…

Roll the dice and, according to numbers from one to six, ask if there is someone who wants to contribute completing the number related statement. Ask the rest of the group if they agree or if they have different thoughts.

Stimulate the debate in the group with the following questions:

- What knowledge have you gained from your experience with the game?
Is there a specific dynamic element of the game experience that you could draw a parallel to in our daily lives?
- Which element was the most unexpected during the game?

The facilitators should try to highlight any particular behavior or element that they observed among the players during the game, such as selfishness, cooperation, authoritarianism, passivity, competition, and so forth. Inquire whether the players would adopt the same approach in a practical real setting, whether they consider a particular attitude or behavior to be widespread based on their real-life experiences, and whether they believe such behavior to have a positive or negative influence on the sustainable development of their community.
- Is there anything in particular that you wish to learn more about the SDGs?
- What is the significance of the Sustainable Development Goals?
- How can every individual make a contribution to the attainment of the objectives?
- What steps can you take to positively impact our planet?
- What about your life? Which aspects of your life are you willing/ready to modify for the greater

benefit of society?
- Do you perceive the achievement of the SDGs as feasible? Why?
- Do you consider yourself and your actions to have any impact on their accomplishment?
- Are certain objectives deemed more relevant than others? Specifically, which ones? Why?
- Which SDGs hold the utmost significance for your local community?

This last exercise could be implemented at the end of the workshop; it is thought to stimulate the participants to debate about the SDGs:

The participants will be provided with a sheet of paper and a pen, then they will be asked to focus on the 17 Sustainable Development Goals. (they will be provided with the list of the 17 SDGs)
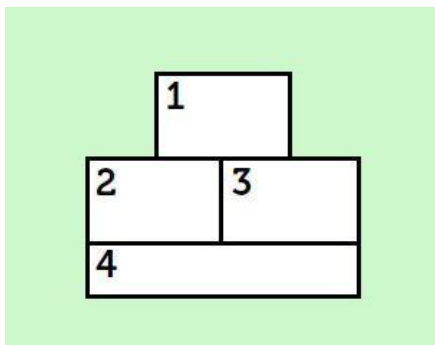
The participants should then be requested to draw a podium and then be asked to insert in the boxes the four most important SDGs in order of importance according to their point of view, by choosing them from the list previously given.

They will do the exercise first individually, then in groups formed by two people, then by 4, by 8 and at the end they will be requested to decide a common list for all. The activity is set in order to give the participants the chance to discuss the reasons why they consider a goal more relevant than another one.

The first debate gives the cues for the final discussion which involves all participants. Everyone shall explain his/her point of view. Disagreements may occur about the importance to be given to the various SDGs and participants might find it difficult to find a common point of view to decide what the order of importance of the SDGs is, even if in general they agreed on which ones are the most relevant.

This activity will be closed with a debate/discussion to gather the overall feelings of the participants regarding it. You may use the following questions:
- How did you feel during the activity?
- How hard was it to list the SDGs in order of importance?
- How hard was it to link the SDGs you wrote down with the other participants' lists?
- Did you experience any conflict? If yes, how did you handle them?
- After this activity do you still think it is possible to set a list of importance?
- Do you think the SDGs are interconnected? How?

9. LIST OF USEFUL SOURCES AND REFERENCE LIST

- https://www.teacheracademy.eu/blog/game-based-learning/
- https://europeyou.eu/es/game-based-learning-for-youth-workers/
- https://trepo.tuni.fi/handle/10024/147958
- https://u.pcloud.link/publink/show?code=XZb7KwXZ9j5HKw3mIyHBUi3vr2fhfHkcpljy
- Sustainable Development Goals - Resources for educators (unesco.org)
- The number one resource for sustainability in UK tertiary education | Sustainability Exchange
- Going Green: 8 Activities to Teach Sustainability in Your Classroom - Project Learning Tree (plt.org)
- Find environmental education resources | Ministry for the Environment
- Climate change and sustainability teaching resources | RSC Education
- 6 Traits of a Sustainable City (With Examples) | Digi International
- Attention Required! | Cloudflare (thezebra.com)
- Sustainability Resources for Teachers | Cities | Center for Sustainable Systems (umich.edu)
- What is a sustainable city? | Meep
- About ecologist social movements and associations:
- Agroecology Europe - https://www.agroecology-europe.org/
- Fridays For Future (Demands of FFF) https://fridaysforfuture.org/what-we-do/our-demands/
- Extinction Rebellion https://rebellion.global/why-rebel/
- La Ecoaldea (Youth Association - UCM) https://laecoaldeaucm.wordpress.com/presentacion/
- Ecologistas en Acción - https://www.ecologistasenaccion.org/quienes-somos/
Academic research:
- Bibri, S.E., Krogstie, J. (2019). Generating a vision for smart sustainable cities of the future: a - scholarly backcasting approach. Eur J Futures Res 7, 5 . https://doi.org/10.1186/s40309-019-0157-0
- Pandiyan, P., Saravanan, S., Usha, K., Kannadasan, R., Alsharif, M. H., Kim, M-K. (2023). - Technological advancements toward smart energy management in smart cities. Energy Reports (Vol. 10, pages 648-677.) https://doi.org/10.1016/j.egyr.2023.07.021
- Orejón Sánchez, R. D., Crespo García, D., Andrés Díaz, J. R.,Gago Calderón, A. (2022). Smart cities' development in Spain: A comparison of technical and social indicators with reference to European cities. Sustainable Cities and Society., 81. https://doi.org/10.1016/j.scs.2022.103828
- Singh, T., Solanki, A., Sharma, S. K., Nayyar, A., & Paul, A. (2022). A Decade Review on Smart Cities: - - Paradigms, Challenges and Opportunities. IEEE Access. https://ieeexplore.ieee.org/abstract/document/9801818
- Cambra-Fierro, J. J., & Pérez, L. (2022). (Re)thinking smart in rural contexts: A multi-country study. - - Growth and Change, 53, 868–889. https://doi.org/10.1111/grow.12612
- Sustainable Cities and Society - https://www.sciencedirect.com/journal/sustainable-cities-and-society
- Journal of Ecology - https://besjournals.onlinelibrary.wiley.com/journal/13652745
- Journal of Cleaner Production - https://www.sciencedirect.com/journal/journal-of-cleaner-production