Co-funded by
the European Union

Module 1

1.1 InterGenerational Learning

intergenic.eu
@intergenicproject
InterGenic EU Project

1.1.1 Introduction to intergenerational learning

Overview and definition of intergenerational learning

Intergenerational Learning (IGL) is a form of lifelong learning which means that at least two generations are involved in common activities, knowledge share and experiences. It is when generations work together. The learning can be formal, non-formal and informal. Among the most common non-formal ways is for example, when parents and grandparents help children read, write and do maths. This works both ways, when also children teach their parents how to use a phone or a computer.

Definition

Intergenerational learning is a process, through which individuals of all ages acquire skills and knowledge, but also attitudes and values, from daily experience, from all available resources and from all influences in their own ‘life worlds (EAGLE, 2008)

1.1.1 Introduction to intergenerational learning

Goals of intergenerational learning

	Share knowledge & Skills	Encourages Lifelong Learning	Foster understanding	Build better communities	People do not feel alone
Explanation	Older generations can share valuable life skills while younger generations can share technological skills and new perspectives.	Promotes the idea that learning is a lifelong process, encouraging individuals of all ages to continue learning from each other.	Breaks down stereotypes and misconceptions between generations, promoting empathy and respect.	When different age groups come together this strengthens community bond and the sense of belonging.	Interactions as such reduce feeling of loneliness, especially among older adults while provide social engagement.
Examples	A retired mechanic teaches how to fix bikes at a community workshop, while kids teach him about apps and gadgets. Both sides learn new skills from each other.	Students do a “Tech Help Day” for seniors to teach them smartphone and computer skills. Older adults learn how to stay connected, and teens gain teaching experience.	A school invites seniors to share stories from their youth with students. Kids learn about life in the past, while seniors hear about today’s trends. This helps everyone understand each other better and reduces stereotypes.	Once a month, families of all ages gather at a community center to cook and eat together. This builds stronger friendships in the community and helps people feel they belong.	A program matches students with seniors who may feel lonely. They meet once a week to play games or do crafts together, which helps both feel happier and more connected.

1.1.1 Introduction to intergenerational learning

Real-life examples of intergenerational learning outcomes

Intergenerational School Garden Project (Spain)

In rural Spanish schools, students and seniors worked together to cultivate school gardens. Seniors shared traditional gardening techniques, while students learned about sustainable farming and environmental care. This project encouraged knowledge sharing, social interaction, and respect for the environment across generations.

Men's Shed (Ireland)

This initiative is particularly popular in Ireland and creates a space for men of all ages to collaborate on hands-on projects. While not exclusively intergenerational, these spaces foster natural mentoring relationships and support.

https://menssheds.ie/

Seniors and Children learning together (Greece)

This initiative encourages seniors to teach grandchildren local dialects, folklore, and traditional stories. Organized by Greek community centers in cooperation with Greece's ministry of Culture and Sports, it focuses on preserving cultural heritage.

1.1.1 Introduction to intergenerational learning

Real-life examples of intergenerational learning outcomes

Seniors and pupils having breakfast together (Belgium)

Each year a breakfast is organized by the local Council of Seniors in cooperation with 12-14 years old pupils of the SHIL School. The pupils are bringing older persons with disabilities from their rooms – especially those in wheelchairs – to the tables. The youngsters are serving the breakfast for the older persons.

Generation Centers (Romania)

A program that aims to offer various educational and professional activities after school. The focus is on children from 20 disadvantaged communities, and the project is implemented by senior volunteers.

Intergenerational Living (Austria)

A housing model that promotes interactions between different age groups, especially young people and seniors. ÖJAB's innovative Intergenerational Residence Experience is an initiative in Vienna that creates inclusive living environments where residents of all ages can share experiences, support one another, and build community.

1.1.2 Benefits of Intergenerational Learning

Psychocognitive benefits for Seniors

- Working with people of different ages helps improve thinking skills like memory and problem-solving, as everyone learns from each other.

Brain Boosting

Reduces Loneliness and Depression

- Interacting with younger generations can help reduce feelings of loneliness and sadness, making seniors feel happier and more connected.

- Sharing their life experiences and knowledge with younger individuals makes seniors feel valued and important, improving their self-esteem.

More Self-worth and Confidence

1.1.2 Benefits of Intergenerational Learning

Personal and Developmental Benefits for Youth

Develop empathy

- Working with seniors gives youth a chance to see things from different viewpoints, helping them become more caring and understanding.

Sense of responsibility

- Taking part in intergenerational activities allows young people to be mentors or helpers, which boosts their confidence and teaches them to be responsible.

Boost Communication Skills

- Talking with older adults helps young people learn to listen and talk more effectively; improving their communication skills and enriching their vocabulary.

1.1.2 Benefits of Intergenerational Learning

Societal Benefits

- It allows different generations to share their skills and experiences, leading to creative solutions for community problems and improving overall well-being.

Transfer of knowledge and skills

Reduction of generational gap

- When all ages interact and communicate breaks down stereotypes and creates respect for everyone, no matter their age.

- Intergenerational initiatives build stronger connections and bonds creating the send of a community that together can overcome difficulties of life and help each other.

Stronger bonds

Training Activity 1

Sharing life stories!

 5-10 people	**Materials you need:** - Chairs set up in circle - Papper - Pens	 45-60´

Objective

To bridge generational gaps by allowing seniors to share life stories and experiences with young learners, promoting empathy, understanding, and communication skills.

Steps

1. Introduction (10 minutes)

Briefly introduce the concept of intergenerational learning. Discuss the value of life stories and how they shape identity and cultural understanding.

2. Story Sharing Session (40 minutes)

Seniors are invited to share significant life events or experiences. These can range from stories about childhood, work life, family traditions, or historical events they lived through. Youth are encouraged to ask questions and engage with the seniors.

Training Activity 1

3. Discussion & Reflection (10 minutes)

Ask participants what they learned from the stories.

What story shared by the senior impacted you the most, and why?

Discuss how these stories change or enhance their understanding of the past and the senior generation.

How did listening to the seniors' life stories change your perspective on their generation?

What did you learn from the stories that you think is important to remember or pass on to others?

Tips

In this activity, facilitators can be either youth or seniors, with participants being the opposite group. If youth are the facilitators, the seniors will be the participants to whom the questions are directed, and vice versa.

Training Activity 2

Breaking Stereotypes

 5-10 people	**Materials you need:** - Flip chart/whiteboard - Paper and pens - Printed stereotypes	 45-60´

Objective

To address and challenge common stereotypes held by different generations through facilitated discussions and role-play. The aim is to promote understanding, empathy, and mutual respect between students and seniors.

Steps

1. Introduction (10 minutes)

Start by explaining what a stereotype is, and how stereotypes can impact relationships between different age groups. Print the common stereotypes.

Youth:

1. *Youth are lazy and lack work ethic*
2. *Youth are overly reliant on technology*
3. *Youth don't respect tradition or value older generations*

Training Activity 2

Seniors:

1. Seniors are bad with technology

2. Seniors are stuck in their ways and resistant to change

3. Seniors are weak and dependent

2. Role Play (25 minutes)

Divide participants into groups of 2-3 people each.

(10 minutes) Ask each group to select one stereotype (e.g., *"Seniors don't understand technology"* or *"Youth don't care about history"*) and prepare a short role-play that exaggerates this stereotype. The goal is to demonstrate how unrealistic or harmful these stereotypes can be when taken to the extreme.

(10 minutes) Performance: each group presents their role play to the rest of the team.

3. Discussion & Reflection (10 minutes)

Facilitate a discussion where participants reflect on what they've learned from the activity. Ask:

"What surprised you about today's session?"

"How can we challenge stereotypes in everyday life?"

"How has your perception of the other generation changed after this activity?"

Training Activity 2

Tips

In this activity, facilitators can be either youth or seniors, with participants being the opposite group. If youth are the facilitators, the seniors will be the participants to whom the questions are directed, and vice versa.

Additional Resources

Video: "The Value of Intergenerational Relationships"

- **Description**: Dr. Lori Stevic-Rust discussing the mutual benefits of intergenerational relationships and learning.
- **Access**: https://youtu.be/7CRhys10Vd4?feature=shared

Video: “Why We Need Intergenerational Relationships”

- **Description**: Jenna and Jordan McMurtry twin sisters discuss their personal experiences and interactions with seniors.
- **Access**: https://youtu.be/abzqjuhlfP4?feature=shared

Article: "What is Intergenerational Learning?"

- **Description**: An informative brochure by the organization “Generations Working Together” that defines key terms and concepts.
- **Access**: https://generationsworkingtogether.org/downloads/5252d276ca45a-GWT%20brochure%20FINAL.pdf

Article: "Intergenerational learning: Proven benefits for both elders and youth "

- **Description**: An informative article by the organization “The Center on Reinventing Public Education (CRPE) ” that highlights the benefits of intergenerational learning
- **Access**: https://crpe.org/intergenerational-learning/#

References

AGE Platform Europe. (n.d.). Local intergenerational activities in Belgium. Retrieved from: https://www.age-platform.eu/local-intergenerational-activities-in-belgium/

Berg, J. M., & Burch, R. (2020). Intergenerational Learning: A Lifelong Process. Journal of Intergenerational Relationships, 18(2), 1-20

Fitzgerald, A., & Martin, A. (2022). Intergenerational learning in action. ResearchGate. https://www.researchgate.net/publication/363844254_Intergenerational_Learning_in_Action

Generations Working Together. (2011). *Intergenerational learning*. Retrieved from https://generationsworkingtogether.org/downloads/504dec3ddbef6-Intergenerational_Learning_updated_15_Aug_2011.pdf

Generations Working Together. (n.d.). GWT brochure. Retrieved from https://generationsworkingtogether.org/downloads/5252d276ca45a-GWT%20brochure%20FINAL.pdf

Glick, S. (2016). Intergenerational Learning: How Older Adults and Youth Can Benefit from Each Other. Generations United. Retrieved from: https://www.gu.org/resources/intergenerational-learning-how-older-adults-and-youth-can-benefit-from-each-other/

References

Hansen, H. P. (2018). Intergenerational Learning: A Resource for Communities. UNESCO Institute for Lifelong Learning. Retrieved from: https://uil.unesco.org/fileadmin/keydocuments/LifelongLearning/en/Intergenerational_Learning_Resource_for_Communities.pdf

McCulloch, K. (2019). Building Bridges: Intergenerational Learning and its Impact on Youth. Journal of Youth Studies, 22(5), 1-17. Retrieved from: https://www.tandfonline.com/doi/full/10.1080/13676261.2018.1532352

Romanian United Fund. (n.d.). Generation centers - The Princess Margareta of Romania Foundation. Retrieved from: https://www.romanianunitedfund.org/project_generation_centers_the_princess_margareta_of_romania_foundation

Wisdom, J. P., & Ananta, R. (2018). The Role of Intergenerational Programs in Reducing Isolation and Loneliness in Older Adults. Journal of Aging Studies, 46, 25-32. Retrieved from: https://www.sciencedirect.com/science/article/abs/pii/S0890406517301786

QUIZ

1. What is intergenerational learning (IGL)?
A) A method of teaching only to older adults
B) A process where at least two generations share knowledge and experiences
C) A formal classroom learning environment
Answer: B

2. Which of the following is a benefit of intergenerational learning for seniors?
A) Learning new skills
B) Feeling more isolated
C) Reduced problem-solving skills
Answer: A

3. Which of these examples illustrates intergenerational learning?
A) Grant parents and parents teaching their children to read
B) Children teaching grandparents how to use smartphones
C) All of the above
Answer: C

4. What is a key societal benefit of intergenerational learning?
A) Creating competition between generations
B) Increasing generational gaps
C) Strengthening community bonds
Answer: C

5. Which of the following is a psychocognitive benefit of intergenerational learning for seniors?
A) Decreased memory retention
B) Improved thinking and problem-solving skills
C) Increased physical strength
Answer: B

QUIZ

6. Intergenerational learning only occurs in formal educational settings.
- True
- False

Answer: False

7. Intergenerational learning helps reduce loneliness among seniors.
- True
- False

Answer: True

8. One of the goals of intergenerational learning is to break down stereotypes between different age groups.
- True
- False

Answer: True

9. In the Spanish School Garden Project, students teach seniors about modern farming techniques.
- True
- False

Answer: False (Seniors teach traditional gardening techniques)

10. Intergenerational programs only benefit seniors, not youth.
- True
- False

Answer: False

InterGenic Project

Co-funded by the European Union

SUPPORTING EU'S TWIN TRANSITIONS THROUGH INTERGENERATIONAL LEARNING, EXCHANGES OF KNOWLEDGE, AND JOINT ACTIONS

project number: 2023-1-ES01-KA220-ADU-000155225

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.

The learning material was created in November 2024.
Please note that some linked resources and online content may no longer be updated by their original authors, and may become outdated or unavailable over time.

intergenic.eu
@intergenicproject
InterGenic EU Project

Co-funded by
the European Union

Module 1

1.2 Communication Skills

intergenic.eu
@intergenicproject
InterGenic EU Project

1.2.1 Effective Communication Techniques

Communication skills is the ability to transmit information consistent with the content to be expressed to the chosen target audience.

The core of the ‘communication skills’ is to:

Make questions

Express opinions and ideas

Teamwork

Verbal and written communication

1.2.1 Effective Communication Techniques

Some effective techniques of communication are to:

❖ Address others by their name

When communicating with a person, use their name. It can show personalization and attention to detail, encouraging openness and honesty in your conversation.

❖ Prepare notes

When presenting or planning to speak in front of a small or large group of people it can be helpful to prepare some noted to clarify your objective and make your communication more effective and to the point.

❖ Be approachable

Being approachable is a type of emotional availability; something that encourages the development of healthy conversations and exchange of meaningful communication.

❖ Be concise

Being clear and informational in your communication supports the engagement of the audience.

Resource: Top 22 communication techniques for work
https://www.indeed.com/career-advice/career-development/communication-techniques

1.2.1 Effective Communication Techniques

❖ Ask open-ended questions

This type of interaction is collaborative and allows people to take part in the conversation. When people feel active participants in a conversation, they are likely to be more receptive and open.

❖ Perform active listening

This is a conversational technique in which you engage with someone in a respectful manner, supporting the process of effective communication as it enables all parties to better understand the content of conversation, provide feedback and/or avoid repetition.

❖ Acknowledge other points of view

Listening and acknowledging another person's point of view shows openness and acceptance to different ideas. In this way it supports an honest conversation development with respectful and collaborative elements.

❖ Be empathetic

You can do this by paying attention to what people say to you and how they behave when you are communicating with them. Practicing empathy gives you the opportunity to understand and share the feeling of another person.

Resource: Top 22 communication techniques for work
https://www.indeed.com/career-advice/career-development/communication-techniques

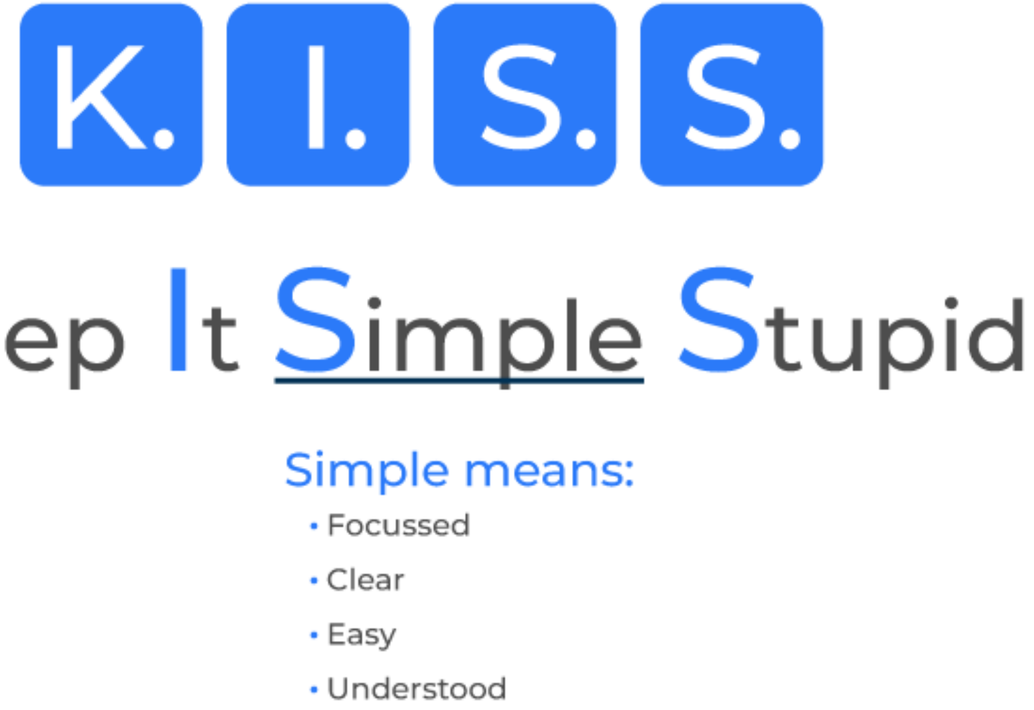
1.2.2 Techniques for simplifying complex topics

- Know your audience
- Use visuals and examples
- Avoid acronyms- Use simple language
- Use body language
- Break down the topic into steps
- Use analogies and metaphors
- Draw pictures

Resource: Mastering the Art of Simplifying Complex Ideas for Effective Communication
https://www.tajucoaching.com/blog/mastering-art-of-simplifying-complex-ideas-for-communication

1.2.2 Techniques for simplifying complex topics

Use the **K.I.S.S.** Principal (first used by Kelly Johnson, US Navy 1960) to stay focussed on your topic, be clear in your communication and use easy language for others to understand.



1.2.3 Active Listening

Listening is the act of paying attention to sounds.

Being a good listener requires you to listen attentively to a speaker, understand what they are saying, respond and reflect on what is being said, and retain the information for later.

Resource: Being A Good Listener
https://www.youtube.com/watch?v=-BdbiZcNBXg

1.2.3 Active Listening

According to Jacob Morgan to practice active listening, you should take into consideration the following:

B: Body Language: How you stand and hold yourself sends a message. A good posture shows to the other person that you are focused on them and open to receive their message.

U: Understanding: When listening to another person, you should realise and understand what they are talking about rather than just nod your head.

I: Interrupting: **DO NOT** interrupt others when they are speaking. You not only cut off the flow of the conversation and interrupt their thoughts; you also show lack of respect.

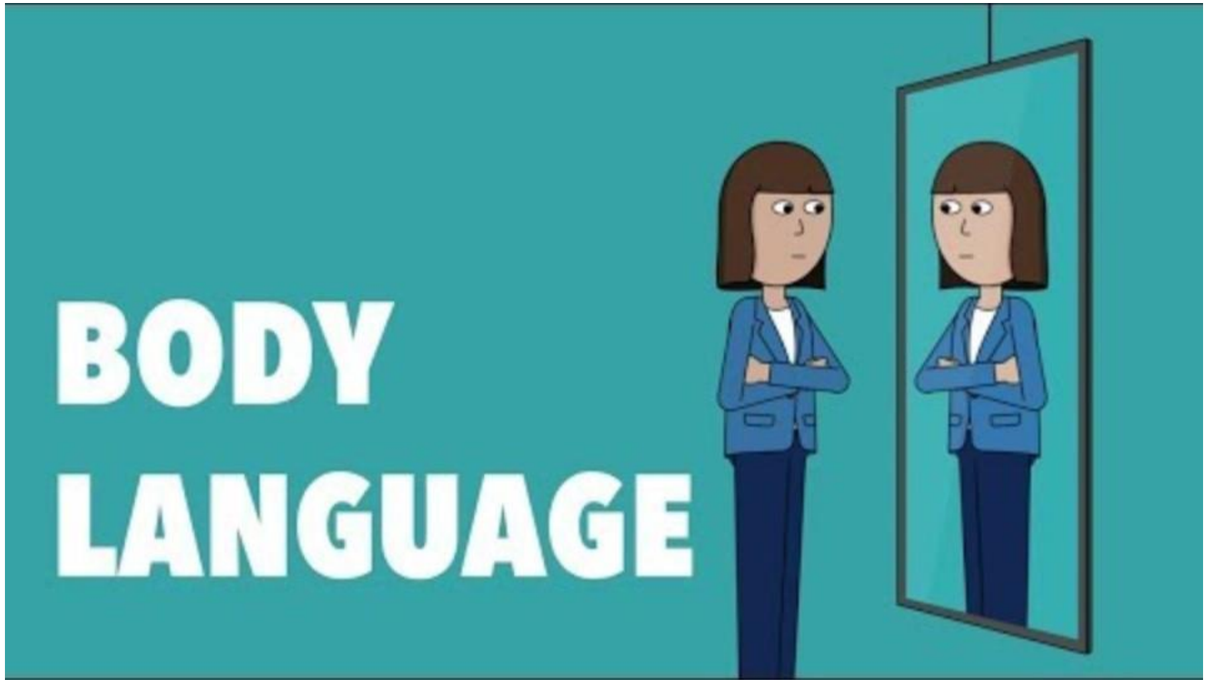
L: Look them in the eye: Eye contact is a practice that shows you are paying attention to what others talk about and you value what is being said.

D: Don't judge: Keeping an open mind and practice empathy when speaking with others, supports your personal growth and makes you a better communicator.

Resource: 5 Ways to Practice Active Listening
https://jacobm.medium.com/5-ways-to-practice-active-listening-924b58746494

1.2.4 Body language and non-verbal cues

‘**Body language** is the of communicating through non-verbal signals…’



Resource: Body Language
https://www.youtube.com/watch?v=1sfM-xx7tHI

1.2.4 Body language and non-verbal cues

Non- verbal cues are signals that support a communication process.

The non-verbal cues include gestures, facial expressions, touch, tone of voice, physical distance, and even a person's physical appearance.

In some cases, the non-verbal cues are the main communication channel (i.e. nodding 'yes' or 'no', using thumbs up or down, etc.) while in other cases they supplement the meaning of verbal communication (i.e. showing a picture to the audience while explaining verbally the meaning).

Non-verbal communication is important for creating a visual language to further engage with the audience and reinforce the meaning of vital points mentioned during verbal communications. Also, these cues can regulate the flow of a conversation and indicate both the beginning and end of a topic, adding more clarity to a message conveyed.

Resources: Non-verbal Cues in Communication | Importance & Examples
https://shorturl.at/9grHl

Types of Nonverbal Communication
https://www.verywellmind.com/types-of-nonverbal-communication-2795397

1.2.5 Building patience and demonstrating empathy

Empathy is the ability to understand a situation from another person's perspective and feel their emotions.
Practicing empathy in communication builds trust, strengthens relationships, and promotes an inclusive and supportive environment.

Be patient in communication is also important.
Having patience during a conversation can support the creation of meaningful interactions, avoiding conflicts and fostering productive communications.
Patience supports a person's conscious effort to understand their audience and with clarity to cultivate inclusivity and effective communication.

Resource: The importance of empathy
https://www.youtube.com/watch?v=UzPMMSKfKZQ

1.2.6 Age-Specific Communication Skills

Age Specific Competencies refer to the ability to communicate with each person in a way that is appropriate to their particular age and individual station. Tailoring communication to the specific age group helps in building rapport and ensuring that messages are effectively conveyed and understood.

Examples for age-specific communication with **youth**:

- Treat them as adults.
- Have patience.
- Respect their opinion.
- Provide guidance in a respectful manner.
- Encourage them to ask questions creating a safe environment to exchange opinions and knowledge (‘There is no such thing as a stupid question’).
- Avoid an authoritarian approach of interaction/ communication.
- Use visual aids and create interactive activities to keep them engaged.

Resource: What are Age-Specific Competencies? https://north.ufhealthjax.org/Volunteer/New/Documents/Age-Specific-Competencies.pdf

1.2.6 Age-Specific Communication Skills

Examples for age-specific communication with **seniors**:

- Acknowledge the physical, mental and social abilities a person has.
- Use simple language when explaining a new concept.
- Provide guidance in a respectful manner and have patience.
- Repeat and/ or make a recap at the end of each discussion/ topic.
- Encourage them to ask questions creating a safe environment to exchange opinions and knowledge (‘There is no such thing as a stupid question’).
- Use non- verbal cues and body language to keep their attention.
- Encourage as much independence as possible.
- Practice active listening and empathy.

Resource: What are Age-Specific Competencies? https://north.ufhealthjax.org/Volunteer/New/Documents/Age-Specific-Competencies.pdf

Activity 1.1

Self- evaluation

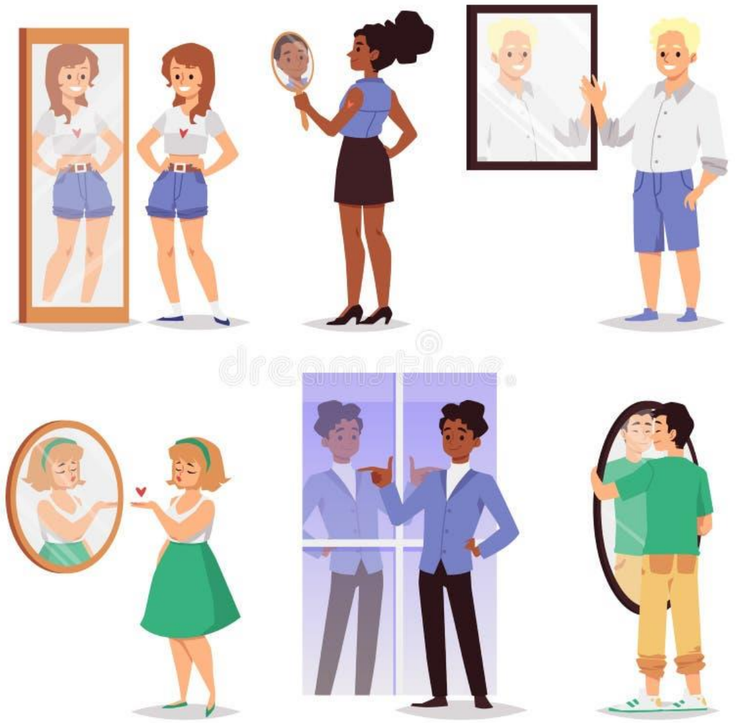
1. Choose a module and read it.
2. Stand in front of a mirror and practice.
3. Present the content and notice yourself.
4. Then, ask yourself the following:

- How do I speak?
- Do I speak fast or slow?
- Am I clear?
- Did I understand the content myself?
- How is my posture?
- Have I used my body to support my verbal communication?
- Did I use any gestures or non-verbal cues?

If yes, did they support my communication properly?

- Where there relevant enough?
- Is there room for improvement?

If yes, write down the points to improve and practice again.



Resource: Sabelskaya

Activity 1.2

What do the following non-verbal cues mean?
Do they convey a message? If yes, what are the messages and how they make you feel?

Resource: iStock by Getty Images

Additional Resources

- **Video: “Active Listening Skills”,** by Communication coach Alexander Lyon

Link: https://www.youtube.com/watch?v=7wUCyjiyXdg

- **Blog: “Master the Art of Listening; 6 Tips to being an active listener”**

Link: https://cubecreative.design/blog/small-business-marketing/master-the-art-of-listening

- **Video: “Body Language Simply Explained”**

Link: https://www.youtube.com/watch?app=desktop&v=iELkzDgLK9c

- **Video: “Body Language for Presentations”** by Communication coach Alexander Lyon

Link: https://www.youtube.com/watch?v=TmbQFWBvTtY

- **Article: "Body Language and Nonverbal Communication. Communicating Without Words”,**

by Jeanne Segal, Ph.D., Melinda Smith, M.A., Lawrence Robinson and Greg Boose

Link: https://www.helpguide.org/relationships/communication/nonverbal-communication

- **Blog: “Non-Verbal Communication.”**

by the International Journal of Neurolinguistics & Gestalt Psychology (LinkedIn)

Link: https://www.linkedin.com/pulse/non-verbal-communication-ijngp

- **Article: " The Role Of Patience In Effective Communication And Active Listening”**

Link: https://fastercapital.com/topics/the-role-of-patience-in-effective-communication-and-active-listening.html

References

Cherry, Kendra. 2023. ‘Types of Nonverbal Communication. Often you don't need words at all’. Last retrieved 16.10.2024. https://www.verywellmind.com/types-of-nonverbal-communication-2795397

Indeed Editorial Team.2023. ‘Top 22 communication techniques for work’. Last retrieved 16.10.2024. https://www.indeed.com/career-advice/career-development/communication-techniques

Franz, Maggie; Williams Yolanda. 2023. ‘Nonverbal Cues in Communication | Importance & Examples’. Laste retrieved 16.10.2024. https://shorturl.at/9grHl

LearnFree. 2019. ‘Body Language’. https://www.youtube.com/watch?v=1sfM-xx7tHI

Lifehackers. 2017. ‘The importance of empathy’. https://www.youtube.com/watch?v=UzPMMSKfKZQ

Lincoln, Anthony. 2023. ‘The Key Role of Patience in Effective Communication’. Last retrieved 16.10.2024. https://www.linkedin.com/pulse/key-role-patience-effective-communication-lincoln-anthony--szk7c

Morgan, Jacob. 2021. ‘5 ways to practice Active Listening’. Last retrieved 16.10.2024. https://jacobm.medium.com/5-ways-to-practice-active-listening-924b58746494

Reid Sheldon. ‘Empathy - How to Feel and Respond to the Emotions of Others’. Last retrieved 16.10.2024. https://www.helpguide.org/relationships/communication/empathy

Sen, Judhajit, 2024. ‘What is Empathic Communication and Why is it Important at the Workplace?’. Last retrieved 16.10.2024. https://prezentium.com/what-is-empathic-communication/

Team Taju Coaching. 2024. ‘Mastering the Art of Simplifying Complex Ideas for Effective Communication’. Last retrieved 16.10.2024. https://www.tajucoaching.com/blog/mastering-art-of-simplifying-complex-ideas-for-communication

The School of Life. 2016 ‘Being A Good Listener’. https://www.youtube.com/watch?v=-BdbiZcNBXg

UF Health North. ‘What are Age-Specific Competencies?’. Last retrieved 16.10.2024. https://north.ufhealthjax.org/Volunteer/New/Documents/Age-Specific-Competencies.pdf

QUIZ

1. Name 3 effective communication techniques.
2. What does K.I.S.S. mean, and in which case this method can support you?
3. How can a person become an active listener?
4. What are 3 basic tips for your body language when presenting?
5. What is empathy and how can support your communications?
6. What are some common age-specific communication examples for youth and seniors?

Co-funded by the European Union

InterGenic Project

SUPPORTING EU'S TWIN TRANSITIONS THROUGH INTERGENERATIONAL LEARNING, EXCHANGES OF KNOWLEDGE, AND JOINT ACTIONS

project number: 2023-1-ES01-KA220-ADU-000155225

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.

The learning material was created in November 2024.
Please note that some linked resources and online content may no longer be updated by their original authors, and may become outdated or unavailable over time.

intergenic.eu
@intergenicproject
InterGenic EU Project

Co-funded by
the European Union

Module 1

1.3 How to become a mentor

intergenic.eu
@intergenicproject
InterGenic EU Project

1.3.1 Understanding the Role of a Mentor

A **mentor** is an individual with expertise who can help develop the career of a mentee. A mentor often has two primary functions for the mentee. The career-related function establishes the mentor as a coach who provides advice to enhance the mentee's professional performance and development. The psychosocial function establishes the mentor as a role model and support system for the mentee. Both functions provide explicit and implicit lessons related to professional development as well as general work–life balance.

1.3.1 Understanding the Role of a Mentor

A mentor can help someone achieve their personal and professional development objectives when they:

- Are more experienced in the specific area of personal development
- Share knowledge and personal experience
- Are impartial and will give a new perspective
- Can build trust and will observe confidentiality

1.3.1 Understanding the Role of a Mentor

Some of the **benefits** of the mentoring role are:

- An opportunity to 'give back' and help others using experience gained and making it available to a new person
- The chance to build new relationships
- Exposure to fresh perspectives, ideas and approaches
- Opportunities to reflect on your own goals and practices
- Improved peer recognition
- The chance to practice interpersonal skills
- Personal satisfaction through supporting the development of others

1.3.2 Qualities of a Successful Mentor

Mentors should utilize the following core skills in their mentoring partnerships:

1. Listening actively
2. Building trust
3. Encouraging
4. Identifying goals and current reality
5. Instructing/developing capabilities
6. Inspiring
7. Providing corrective feedback
8. Managing risks
9. Opening doors

1.3.3 Building Trust and Rapport

The more that your mentors and mentees trust you, the more committed they'll be to your partnerships with them, and the more effective you'll be. To become **trustable**, you must:

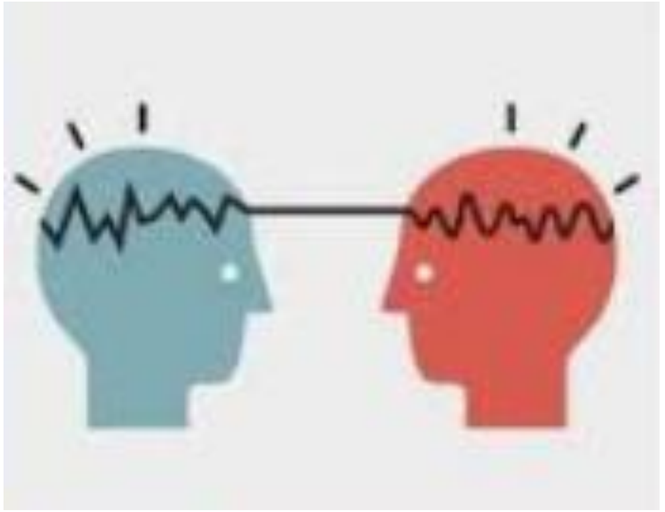
1. Keep confidences shared by your mentors and mentees.
2. Spend appropriate time together.
3. Follow through on your promises to them.
4. Respect your mentors' and mentees' boundaries.
5. Admit your errors and take responsibility for correcting them; and
6. Tactfully tell your partners if and why you disagree or are dissatisfied with something so they'll know you're honest with them.

Particularly with cross-difference (e.g., gender, culture, style, age) mentoring, trust building is crucial and has to be developed over time.

1.3.3 Building Trust and Rapport

Here we summarize with some tips on how to build **rapport**.

1. Show Acceptance of Other People’s ideas
2. Display Positive Body Language
3. Smile and Use Humor When Appropriate
4. Be Approachable or accessible
5. Share Similar Experiences
6. Be Present and Focused
7. Match and Mirror Words and Behavior
8. Show Empathy and Understanding
9. Be Reliable
10. Don’t Invade Privacy



1.3.4 Mentoring Across Generations

Intergenerational practice aims to bring people from different generations together in purposeful, mutually beneficial activities which promote greater understanding and respect and contribute to building more cohesive communities (Hatton-Yeo & Telfer, 2008).


Us 'Oldies' get detached from that and
so it brings us back to base. And...

1.3.4 Mentoring Across Generations: Benefits

Some of the benefits associated with the intergenerational mentoring are:

1. An Extra Layer of Support in People’s Lives
2. Older People Supporting Younger People
3. Younger People Supporting Older People
4. Support for Families
5. Eradicating Negative Age-based Stereotypes
6. Learning New Skills
7. Learning How to Survive and Thrive
8. Skills Transfer in the Workplace
9. Fostering an Appreciation for Rich Cultural Heritages, Traditions, and Histories

Practical activity 1

1. Assess your potential to be a successful mentor by rating yourself on the following

Mentoring Skills.

	Quality of Skill			
Mentoring Skill	**Excelent**	**Very good**	**Adequate**	**Poor**
1. Listening Actively	5	3	1	0
2. Building Trust	5	3	1	0
3. Encouraging	5	3	1	0
4. Identifying Goals and Current Reality	5	3	1	0

Interpretations:
16-20. Excellent core skills;
11- 15. Very good skills;
6-10. Adequate core skills;
5 or less. You'll benefit from coaching and practice on core skills;

Practical activity 1

2. Assess your potential to be a successful mentor by rating yourself on the following

Mentor-Specific Skills.

	Quality of Skill			
Mentor-Specific Skills	**Excelent**	**Very good**	**Adequate**	**Poor**
1. Instructing/Developing Capabilities	5	3	1	0
2. Inspiring	5	3	1	0
3. Providing Corrective Feedback	5	3	1	0
4. Managing Risks	5	3	1	0
5. Opening Doors	5	3	1	0

Interpretations:
20-25. Excellent mentor skills;
15- 19. Very good skills;
10-14. Adequate mentor skills;
9 or less. You'll benefit from coaching and practice on mentor skills;

Additional Resources

1. References

American Psychological Association. *Introduction to Mentoring.* https://www.apa.org/education-career/grad/mentoring

Hatton-Yeo, A. and Telfer, S. (2008). *Generations Working Toge*ther. The Scottish Centre for Intergenerational Practice. Glasgow, United Kingdom. https://generationsworkingtogether.org/downloads/504decd7a096f-Guide_to_Mentoring_Across_Generations_updated_15_Aug_2011.pdf

Phillips-Jones, L. (2003). *The Mentor's Guide. How to Be the Kind of Mentor You Once Had or Wish you'd Had*. The Mentoring Group. California, USA. https://mentoringgroup.com/wp-content/uploads/2023/05/the-mentors-guide.pdf

Phillips-Jones, L. (2003*). Skills for Successful Mentoring: Competences of Outstanding Mentors and Mentees*. The Mentoring Group. California, USA. https://mentoringgroup.com/wp-content/uploads/2023/05/skills-for-sucessful-mentoring.pdf

Starr, J. (2021). *The Mentoring Manual. Your step-by-step guide to being a better mentor*. Pearson. United Kingdom. https://learnstarr.com/courses/the-mentoring-manual-free-downloads/

World Health Organization (2023). *Connecting generations: planning and implementing interventions for intergenerational contact*. World Health Organization. Geneva, Switzerland. https://www.who.int/publications/i/item/9789240070264

2. Web pages

https://www.togetherplatform.com/blog/how-to-mentor-someone

https://www.nationalacademies.org/our-work/the-science-of-effective-mentoring-in-stemm

3. Addicional activities

https://symondsresearch.com/mentoring-activities-for-adult/

QUIZ

1. What is a mentor?

A) An individual with expertise who can help develop the career of a mentee.
B) An individual with expertise in technology
C) An individual who can help in therapy
Answer: A

2. Which of the following is a quality of a successful mentor?

A) Being impulsive
B) Providing corrective feedback
C) Being nice
Answer: B

1. What intergenerational practice aims?

A) To bring people from different cultural backgrounds together for to do cultural activities.
B) To bring people from different generations together in purposeful, mutually beneficial activities.
C) To bring people from different nationalities together for to do recreative activities.
Answer: B

Co-funded by
the European Union

InterGenic Project

SUPPORTING EU'S TWIN TRANSITIONS THROUGH INTERGENERATIONAL LEARNING, EXCHANGES OF KNOWLEDGE, AND JOINT ACTIONS

project number: 2023-1-ES01-KA220-ADU-000155225

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.

The learning material was created in November 2024.
Please note that some linked resources and online content may no longer be updated by their original authors, and may become outdated or unavailable over time.

intergenic.eu
@intergenicproject
InterGenic EU Project

Co-funded by
the European Union

Module 1

1.4 How to Structure a Training Programme

intergenic.eu
@intergenicproject
InterGenic EU Project

1.4.1 Setting clear goals and objectives

- **What is a Goal?**: A goal is something you want to achieve.

- SMART Goals in Mentorship: (Specific, Measurable, Achievable, Relevant, Time-bound goals)
  Defining these parameters related to your goal helps make sure your objectives can be achieved within a specific time period.

- **Activity Suggestion**: Ask participants what they think the parameters represent and invite them to draft a SMART goal for their mentorship program.
  An example SMART goal that can relate to (e.g., improving physical health or learning technology).

1.4.1 What are SMART Goals?

S - Specific (What exactly do you want to do?) Be clear about what you want to achieve.

M - Measurable (How will you know you did it?) Make sure you can track or measure progress.

A - Achievable (Can you really do it?) Choose goals that are realistic.

R - Relevant (Does it help you in your role?) Ensure the goals matter to the mentor and mentee.

T - Time-bound (When do you want to finish it?) Set a time limit for when the goal should be r

1.4.2 Organising a mentoring workshop

Workshop Structure

- **Start with a Plan**: Every workshop needs a structure.

3 Key Parts:

1.Opening: Greet and introduce the topic.

1.Main Activity: Group discussions or practical activities. Present ideas and share knowledge.

1.Closing:End with a summary or final thoughts.

1.4.2 Organising a mentoring workshop

Engagement Techniques

Activities to keep everyone involved. These could be:

- Role-playing (acting out situations).
- Ask questions.
- Use games or group tasks to keep everyone interested.

1.4.3 Selecting teaching materials

Age-Appropriate Resources

- Materials should be easy to understand, with larger fonts, simple vocabulary, and clear visuals.
- Choose materials that suit the age and experience of the mentees.
- Younger mentees may need simpler resources, while older mentees can handle more advanced information.

1.4.3 Selecting teaching materials

Interactive Tools: Use fun activities like games, quizzes, or puzzles to keep younger mentees interested.

Use Familiar Examples: Share examples that connect to things they do or see every day to help them understand better.

Break It Down: Give information in small pieces to avoid confusion. Use easy, step-by-step instructions if needed.

Add Videos or Sounds: Include videos or audio that are both fun and educational.

Feedback and Adaptation: Always make sure they understand and change the lesson if needed to fit their level.

1.4.3 Selecting teaching materials

Integrating Real-Life Case Studies

Real-Life Examples:
Use real stories or examples to help mentees understand better. This makes the learning more practical and meaningful.

Tip: Show an example of a well-designed handout for seniors.

Title: Staying Active for Healthy Aging

Introduction: Meet *Martha*, a 72-year-old woman who started walking every day after her doctor recommended it for her heart health. After a few months, she noticed she had more energy and her mood improved.

Real-Life Case Study:

•Challenge: Low energy and mood swings.

•Solution: 30 minutes of daily walking.

•Result: Increased energy, improved mood, better heart health.

Tips for Staying Active:

1.**Start Small**: Even a 10-minute walk around the block helps!

2.**Find a Buddy**: Exercising with a friend can make it more fun.

3.**Listen to Your Body**: Go at your own pace; if it feels too hard, take a break.

4.**Use What You Have**: No need for fancy equipment. A pair of comfortable shoes is enough to start.

1.4.4 Using digital tools for mentoring

Communication tools for teaching

We will introduce tools like **Zoom** or **WhatsApp** for virtual mentoring sessions and virtual communication.

Zoom is a communications platform that allows users to connect with video, audio, phone, and chat. Using Zoom requires an internet connection and a supported device.

WhatsApp can be used to discuss ideas, share files, and work together on assignments. This can be particularly useful for students who are unable to meet in person due to distance or a busy programme.

1.4.4 Using digital tools for mentoring

Tools for story-telling

You can use tools like PowerPoint or Canva to tell stories with pictures or slides, making lessons easier to understand.

1.4.5 Time management and pacing

Balancing Content and Interaction

"Why is time management important in training?“

Brief explanation: Good time management helps keep sessions on track, prevents information overload, and ensures participants stay engaged.

"Keep a balance between content delivery and interaction.“

Explain: Deliver content in small sections, followed by activities, questions, or discussions to maintain engagement.

Example: After explaining a concept, ask participants for their views or conduct a small group activity.

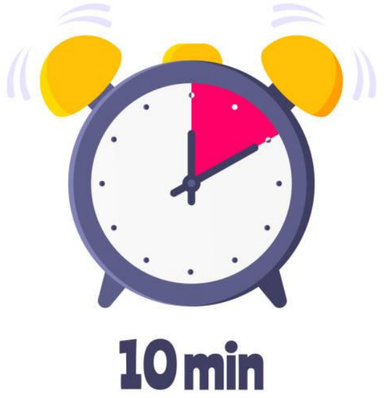
1.4.5 Time management and pacing

Incorporating Breaks and Buffer Time

"Include short breaks in longer sessions to help participants stay fresh.“

Explain: Even a 5-minute break can refresh the mind and prevent exhaustion

Tip: Plan breaks every 45-60 minutes, or when switching to a new topic.



1.4.5 Time management and pacing

Monitoring Progress and Adjusting Pacing

“Track how the session is going and adjust the pace if needed.“

Explain: Keep an eye on participant reactions. If they seem confused or disengaged, slow down or include more interactive elements.

Tools: Use timers or ask for feedback during the session.

Activity 1.4

Checklist for Organizing a Training Session:

- Prepare a **Training Agenda** so everyone knows what will happen and when.
- Have a **Sign-in Sheet** to record attendance.
- Prepare **Training Materials** (handouts, guides, or presentations).
- Make sure all the **Equipment** (like projectors, computers, or speakers) is working.
- Print or share digital copies of **Resources** (like reading materials or references).
- Have **Supplies** like pens, notepads, flip charts, and markers ready.
- Use Name Tags or Badges so everyone knows who’s who.

QUIZ

Quiz: Test Your Knowledge

1. What does SMART stand for?
2. Name one digital tool you can use for mentoring.
3. How can you keep participants engaged during a workshop?
4. Why is it important to manage time in a workshop?

REFERENCES

SMART Goals Framework

For further reading on how to structure and set goals using the SMART criteria:

SMART Goals Overview

Digital Tools for Mentoring

Learn more about Zoom and WhatsApp usage for online mentoring: Zoom, WhatsApp

Mentorship Techniques

Explore additional mentorship engagement techniques:

https://hr.uw.edu/pod/organizational-excellence-and-development/individuals/mentoring-tools/

EU Intergenerational Learning Initiatives

Find more projects and initiatives on supporting intergenerational learning:

EU Education Initiatives

Co-funded by the European Union

InterGenic Project

SUPPORTING EU'S TWIN TRANSITIONS THROUGH INTERGENERATIONAL LEARNING, EXCHANGES OF KNOWLEDGE, AND JOINT ACTIONS

project number: 2023-1-ES01-KA220-ADU-000155225

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.

The learning material was created in November 2024.
Please note that some linked resources and online content may no longer be updated by their original authors, and may become outdated or unavailable over time.

intergenic.eu
@intergenicproject
InterGenic EU Project

Co-funded by
the European Union

Module 2

2.1 Agriculture / Cultivation

intergenic.eu
@intergenicproject
InterGenic EU Project

Module Aims and Objectives

The aim of this module is to provide participants with a comprehensive understanding of six traditional sustainable practices—Agriculture/Cultivation, Crafts, Medicine/Well-being/Diet, Water Management, Architecture, and Transport—by exploring their historical roots, evolution, and relevance in the modern context. The module also aims to highlight contemporary challenges affecting these practices and examine how relevant EU policies address sustainability issues.

By the end of this module, participants will be able to:

1. Describe the history and evolution of six traditional sustainable practices.
2. Analyze the impact of modern challenges, such as climate change and resource depletion, on these practices.
3. Identify key EU policies that influence sustainable practices in the fields of agriculture, water management, architecture, transport, crafts, and medicine/well-being.
4. Compare traditional and modern approaches to sustainability in each of the six areas.
5. Propose strategies for adapting and preserving these practices in the face of current environmental and socio-economic challenges.

Overview

2.1.1 History of Traditional Agricultural Practices
2.1.2 Evolution of Agricultural Techniques
2.1.3 Modern Challenges in Agriculture
2.1.4 EU Policies on Agriculture
2.1.5 Sustainable practices in Agriculture and their Socioeconomic Implications

Practical Activity
Quiz (3 questions)
References

2.1.1 History of Traditional Agricultural Practices

Definition: Traditional agricultural practices are methods used by ancient and indigenous communities for farming, which rely heavily on natural resources, local environmental knowledge, and a deep understanding of the land.

Image source: Ecologic Development Fund: Todd Shapera Photography

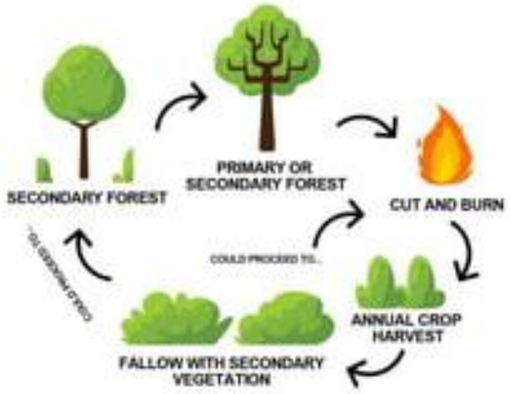


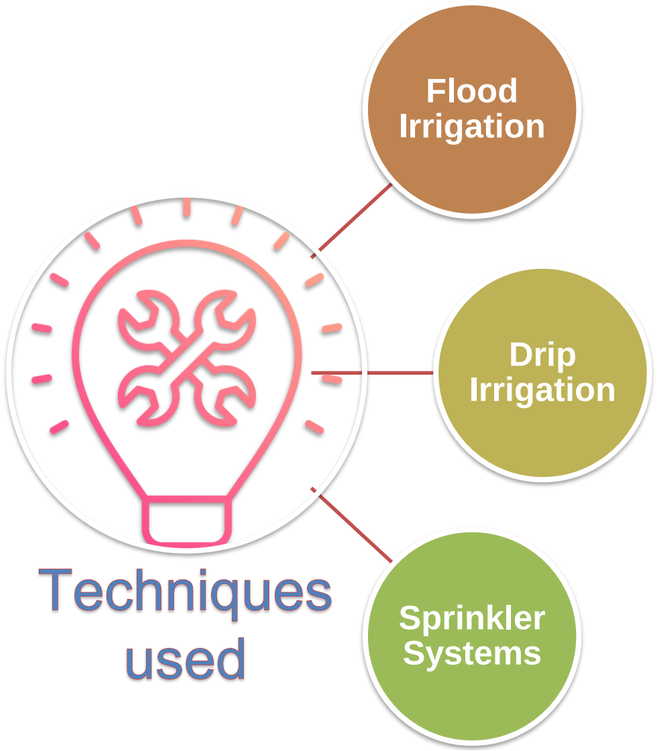
Image source: Slides Share: Shifting cultivation/Jhum Cultivation in Bangladesh

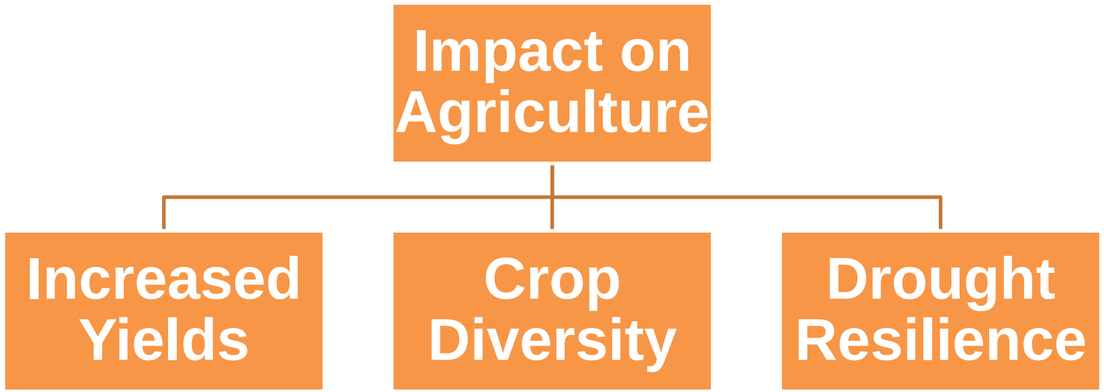
Image source: JournalsofIndia: Rainfed Agriculture in India

2.1.1 History of Traditional Agricultural Practices

Historical Methods of Cultivation

1. Irrigation = artificial application of water to land to assist in the growth of crops.

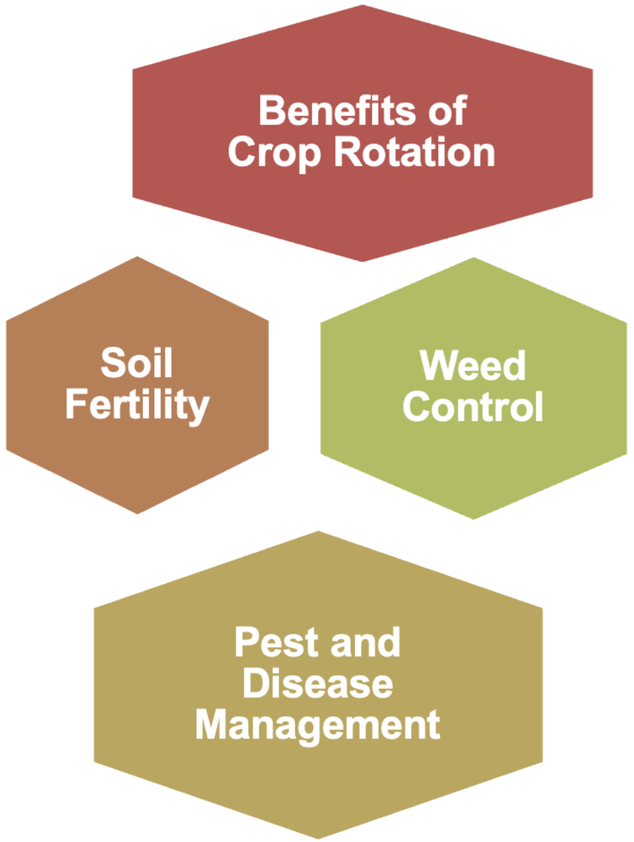




2.1.1 History of Traditional Agricultural Practices

Historical Methods of Cultivation

2. Crop Rotation = the practice of growing different types of crops in the same area in sequential seasons.



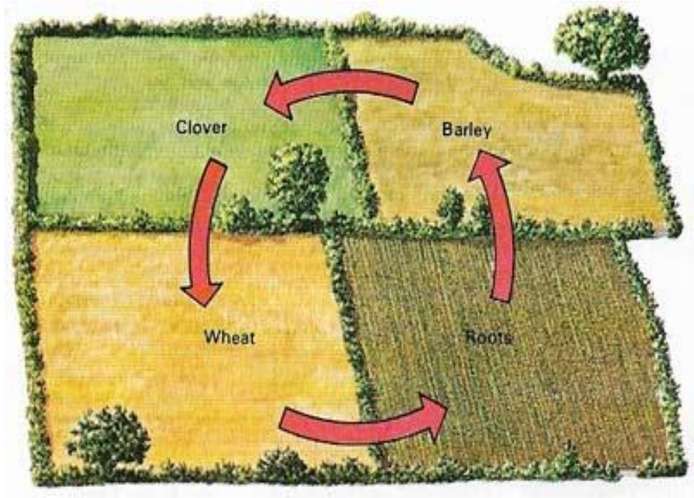
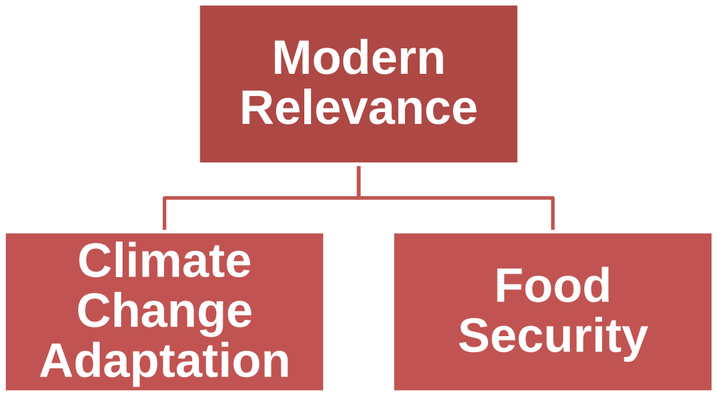


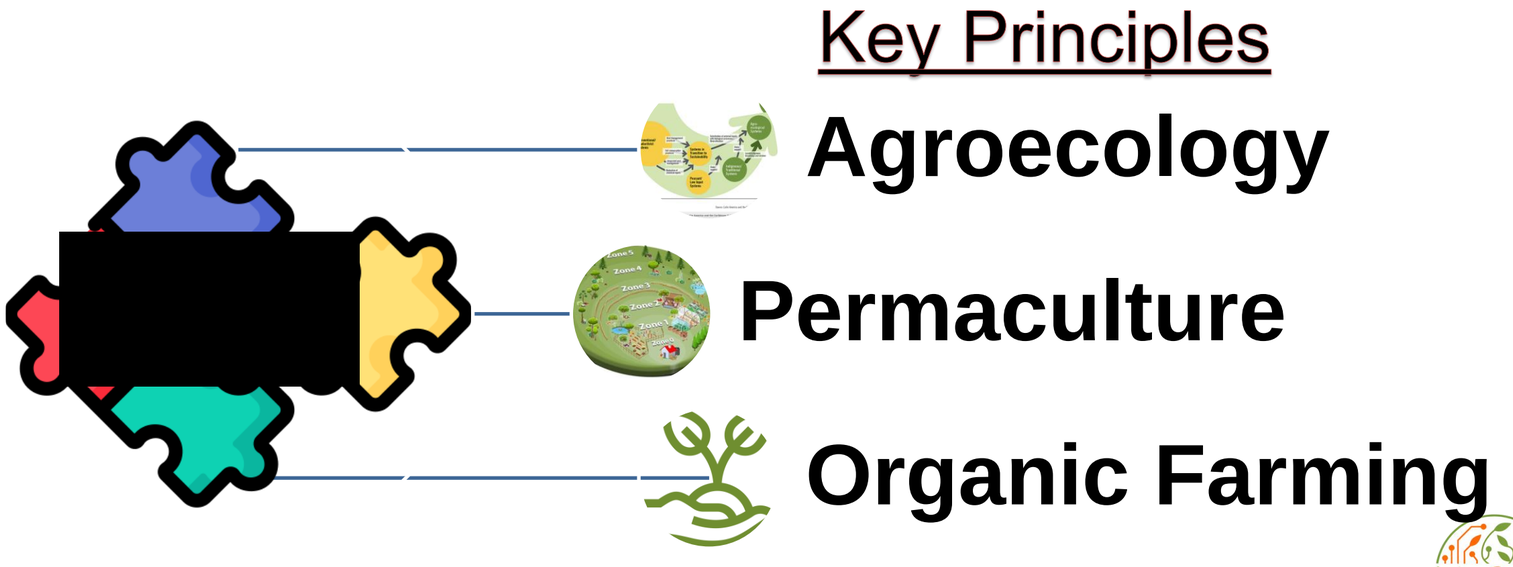
Image source: https://www.daviddarling.info/encyclopedia_of_history/A/agriculture_history.html

2.1.1 History of Traditional Agricultural Practices

Historical Methods of Cultivation

3. Sustainable Farming = agricultural practices that meet current food needs without compromising the ability of future generations to meet theirs.





2.1.2 Evolution of Agricultural Techniques

1. Technological Advancements

Plowing of the past versus the present

Image source: https://www.agrivi.com/blog/plow-a-must-have-piece-of-farm-equipment/

Image source: https://www.historydefined.net/jethro-tull-seed-drill/

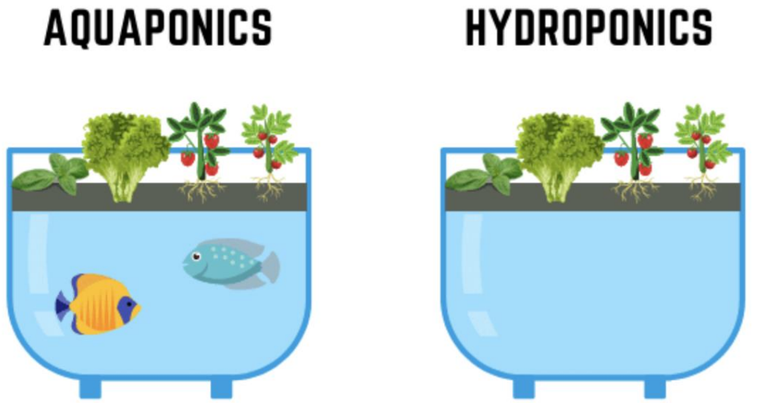
2.1.2 Evolution of Agricultural Techniques

1. Technological Advancements

Modern Technological Advancements:

Image source:
https://tolluncrewedsystems.com/blog/how-drones-are-used-in-agriculture/

Image source:
https://medium.com/@syedsharjeelshah11/biotechnology-in-agriculture-enhancing-crop-productivity-and-sustainability-a5d3ad1b9d53



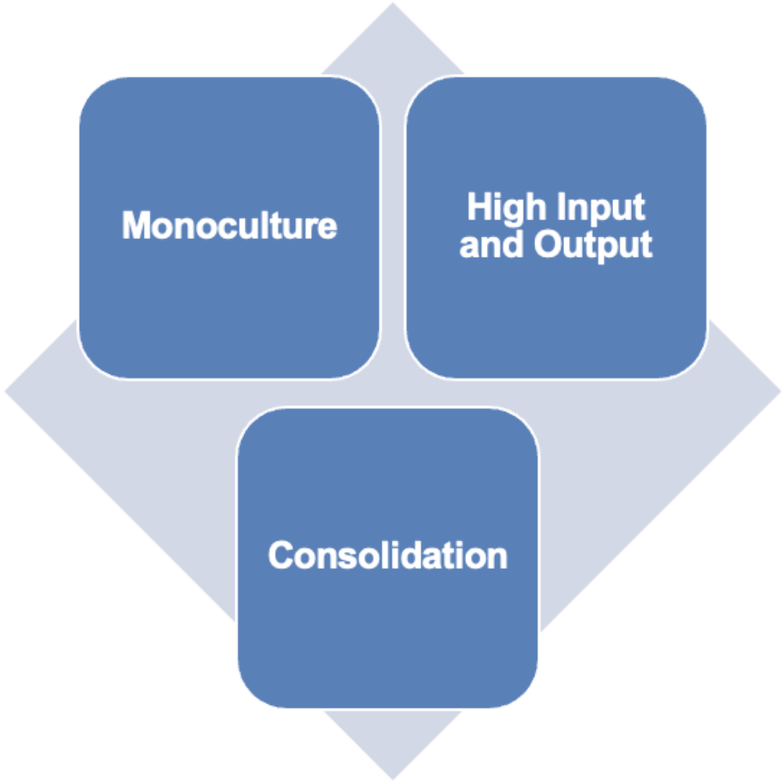
THE AQUAPONICS GUIDE

Image source:
https://theaquaponicsguide.com/aquaponics-garden-are-aquaponics-and-hydroponics-the-same/

2.1.2 Evolution of Agricultural Techniques

2. Industrial Agriculture

Key Features



Benefits of Industrial Agriculture:

- Increased food production
- cost efficiency

2.1.2 Evolution of Agricultural Techniques

3. Impact of Industrial Agriculture on Sustainability

Environmental Consequences

Soil Degradation

Water Pollution

Biodiversity Loss

Social and Economic Effects

Rural Displacement

Dependence on chemicals

2.1.3 Modern Challenges in Agriculture

1. Drought

Impact on Agriculture:

- Reduced Water Supply
- Soil Degradation
- Economic Losses

Solutions

Drought-Resistant Crops:

- Developing crops that can tolerate dry conditions, such as genetically modified drought-resistant varieties.

Water Conservation Techniques:

- Implementing efficient irrigation systems like drip irrigation and water recycling to minimize water waste.

InterGenic

2.1.3 Modern Challenges in Agriculture

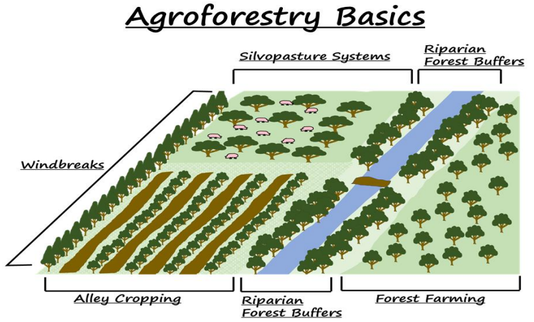
2. Climate Change

Impact on Agriculture → Temperature Fluctuations → Erratic Weather Patterns → Crop Viability

Mitigation Strategies

1. Sustainable Farming Practices

2. Climate-Smart Agriculture



2.1.3 Modern Challenges in Agriculture

3. Soil Degradation

Causes

Overuse of Chemical Inputs:

- Excessive use of fertilizers and pesticides can lead to nutrient imbalances, pollution, and loss of soil biodiversity.

Erosion:

- Unsustainable farming practices, such as tilling, lead to soil erosion, reducing the land's productivity.

Salinization:

- Irrigation with salty water or poor drainage can lead to the buildup of salt in the soil, making it infertile.

Solutions

Conservation Agriculture:

- Practices like reduced tillage, cover cropping, and crop rotation help prevent soil erosion and maintain soil health.

Organic Farming:

- Reducing the use of synthetic inputs and encouraging natural fertilizers (e.g., compost) to restore soil structure and fertility.

2.1.3 Modern Challenges in Agriculture

4. Food Security Degradation

Challenges to Food Security:

- **Climate Change:** Shifts in climate conditions threaten global food production, leading to potential shortages.
- **Population Growth:** Increasing populations require higher food production, placing more strain on agricultural resources.
- **Agricultural Sustainability:** Intensive farming practices can exhaust resources, compromising long-term food availability.

Global Response:

- **Sustainable Development Goals (SDG):** The United Nations promotes sustainable agriculture as part of its goal to end hunger and ensure food security by 2030.
- **Innovation in Agriculture:** Vertical farming, hydroponics, and urban agriculture are new techniques aimed at enhancing food production efficiency, even in challenging environments.

2.1.4 EU Policies on Agriculture

1. Common Agricultural Policy (CAP)

What is it: is the cornerstone of the EU's agricultural policies. Established in 1962, it aims to support farmers, ensure a stable supply of affordable food, and protect the environment.

Main Objectives:

- Support viable farm incomes.
- Enhance the sustainability and competitiveness of agriculture.
- Promote rural development and innovation.
- Ensure food security and safety across the EU.

Budget: CAP is one of the EU's largest budget items, receiving about 30% of the total EU budget, supporting around 10 million farms.

Source: https://eu-cap-network.ec.europa.eu/common-agricultural-policy-overview_en

2.1.4 EU Policies on Agriculture

2. Green Farming Initiatives

What is it: policies and practices promoting environmentally friendly agricultural methods within the EU.

Common Agricultural Policy (CAP) Reforms: The CAP has been reformed to align with the European Green Deal, focusing on sustainability, climate action, and biodiversity preservation.

Integrated Pest Management (IPM): Encourages the use of natural pest control methods, reducing reliance on chemical pesticides to protect crops.

Key features of the Reform:

- **Sustainability:** Strengthened measures to reduce greenhouse gas emissions from agriculture, improve soil health, and conserve water.
- **Digital Agriculture:** Encouraging precision farming and the use of digital tools to reduce environmental impacts.

Source: European Commission (http://capreform.eu/agriculture-in-the-european-green-deal/)

2.1.4 EU Policies on Agriculture

2. Green Farming Initiatives

CAP Reform and Green Deal

Farm to Fork Strategy: A central component of the Green Deal, this strategy aims to create a fair, healthy, and environmentally friendly food system in the EU.

It includes targets such as:

- Reducing pesticide use by 50% by 2030.
- Decreasing fertilizer use by 20%.
- Expanding organic farming to cover 25% of EU farmland by 2030.

Source: https://www.fao.org/fao-who-codexalimentarius/news-and-events/news-details/ar/c/1294984/

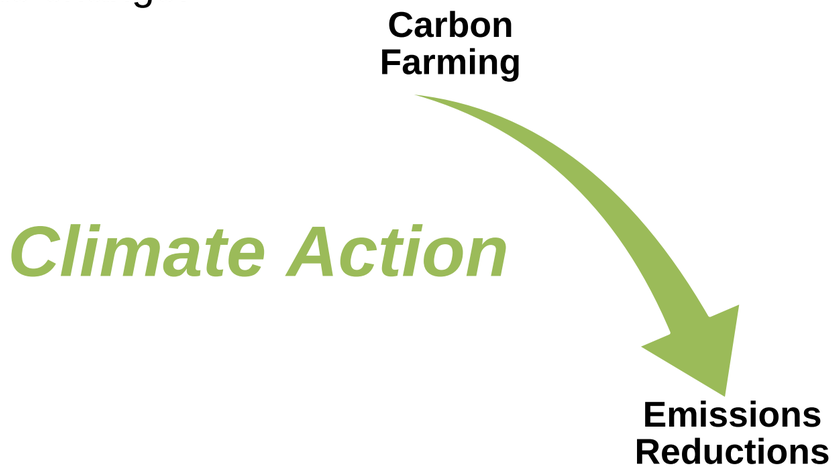
2.1.4 EU Policies on Agriculture

3. Sustainable Agriculture Goals

The EU has set ambitious goals to align agriculture with environmental sustainability, focusing on reducing carbon emissions, improving biodiversity, and ensuring food security.

Biodiversity Strategy for 2030:
Restoring Ecosystems: Focuses on protecting and restoring biodiversity by promoting nature-friendly farming practices. This includes supporting farmers in maintaining habitats for pollinators and other species essential to agricultural productivity.

Conserving Genetic Resources: Encouraging the use of diverse crop and livestock varieties to maintain resilience against diseases, pests, and climate change.



2.1.5 sustainable practices in Agriculture and their Socioeconomic Implications

Spain:

Belgium:

Cyprus:

Ireland:

Greece:

Romania:

Austria:

Activity 2.1

Activity 2.1:

Discuss the feasibility of using traditional agricultural practices today.

Instructions:

In groups, explore the following questions:

- Could traditional agricultural practices (e.g., irrigation, crop rotation, sustainable farming) be applied in modern contexts?
- What challenges would arise in implementing these practices today? Consider factors like climate change, urbanization, technology, and economic systems.
- What resources, adjustments, or innovations would be needed to make these practices as effective as they were in the past?

Quiz

Agriculture / Cultivation Quiz

Question 1: What are traditional agricultural practices, and what key tools were commonly used?

a) They are methods used by modern farmers; tools include tractors and harvesters.

b) They are methods used by ancient and indigenous communities; tools include simple hand-held tools like wooden or iron plows, hoes, and sickles.

c) They are methods involving only monoculture farming; tools include irrigation machinery.

Question 2: What is polyculture, and how did it benefit traditional farming?

a) Growing a single crop to increase efficiency.

b) Growing multiple crops together to maintain soil nutrients.

c) Using genetically modified crops to resist pests.

Question 3: What is sustainable farming, and what is one of its key principles?

a) Farming techniques using only chemical inputs; crop monoculture.

b) Farming techniques that maintain environmental health for future generations; agroecology.

c) Farming aimed solely at maximizing yields; high fertilizer usage.

References

History of Traditional Agricultural Practices:

- Mazoyer, M., & Roudart, L. (2006). A History of World Agriculture: From the Neolithic Age to the Current Crisis. Monthly Review Press.
- Grigg, D. B. (1984). An Introduction to Agricultural Geography. Routledge.
- Smith, B. D. (1995). The Emergence of Agriculture. Scientific American Library.

Irrigation:

- Mays, L.W. (2010). *Ancient Water Technologies*. Springer.
- El-Gohary, F. (2018). "Traditional and modern methods of irrigation." *Journal of Irrigation and Drainage Engineering*, 144(10).
- Postel, S. (1999). *Pillar of Sand: Can the Irrigation Miracle Last?* W.W. Norton & Company.

Crop Rotation:

- Montgomery, D.R. (2007). *Dirt: The Erosion of Civilizations*. University of California Press.
- Karlen, D.L., Varvel, G.E., Bullock, D.G., & Cruse, R.M. (1994). "Crop rotations for the 21st century." *Advances in Agronomy*, 53, 1-45.
- Smith, P. (2014). "Soil carbon sequestration and crop rotation as mitigation strategies for climate change." *Geoderma*, 60(2).

Sustainable Farming:

- Altieri, M.A. (2009). "Agroecology, small farms, and food sovereignty." *Monthly Review*, 61(3), 102-113.
- Gliessman, S.R. (2014). *Agroecology: The Ecology of Sustainable Food Systems*. CRC Press.
- Pretty, J. (2008). "Agricultural sustainability: concepts, principles, and evidence." *Philosophical Transactions of the Royal Society B: Biological Sciences*, 363(1491), 447-465.

Technological Advancements:

- Grigg, D. (1987). *The Industrial Revolution and Agricultural Development*. Basil Blackwell.
- Piesse, J., & Thirtle, C. (2010). "Agricultural R&D, technology, and productivity." *Philosophical Transactions of the Royal Society B: Biological Sciences*, 365(1554), 3035-3047.
- Godfray, H.C.J., & Garnett, T. (2014). "Food security and sustainable intensification." *Philosophical Transactions of the Royal Society B: Biological Sciences*, 369(1639), 20120273.

References

Drought:

- Mishra, A.K., & Singh, V.P. (2010). "A review of drought concepts." *Journal of Hydrology*, 391(1-2), 202-216.
- Panu, U.S., & Sharma, T.C. (2002). *Challenges in Drought Research: Some Perspectives and Future Directions*. Water Science and Technology Library.
- Trnka, M., et al. (2011). "Drought impacts on European agriculture." *Theoretical and Applied Climatology*, 107(3-4), 529-541.

Climate Change:

- Porter, J.R., et al. (2014). "Food security and food production systems." *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects*. IPCC, 485-533.
- Schlenker, W., & Roberts, M.J. (2009). "Nonlinear temperature effects indicate severe damages to U.S. crop yields under climate change." *Proceedings of the National Academy of Sciences*, 106(37), 15594-15598.
- Lobell, D.B., et al. (2011). "Climate trends and global crop production since 1980." *Science*, 333(6042), 616-620.

Soil Degradation:

- Lal, R. (2009). "Soil degradation as a reason for inadequate human nutrition." *Food Security*, 1(1), 45-57.
- Montgomery, D.R. (2007). *Dirt: The Erosion of Civilizations*. University of California Press.
- FAO (2015). *Status of the World's Soil Resources (SWSR) - Main Report*. Food and Agriculture Organization of the United Nations.

Food Security:

- FAO (2018). *The State of Food Security and Nutrition in the World 2018*. Food and Agriculture Organization of the United Nations.
- Godfray, H.C.J., et al. (2010). "Food security: The challenge of feeding 9 billion people." *Science*, 327(5967), 812-818.
- Ingram, J. (2011). "A food systems approach to researching food security and its interactions with global environmental change." *Food Security*, 3(4), 417-431.

Green Farming Initiatives:

- European Commission. (2020). *The Green Deal: Farm to Fork Strategy*. European Union.
- European Commission. (2021). *CAP Strategic Plans - Regulation (EU) 2021/2115*. Official Journal of the European Union.
- EEA (2020). *Sustainable Agriculture and Food Systems in Europe*. European Environment Agency.

References

Sustainable Agriculture Goals:

- European Union. (2019). *The European Green Deal*. European Commission.
- EIP-AGRI (2019). *Promoting Sustainable Agriculture in Europe*. European Innovation Partnership for Agricultural Productivity and Sustainability.
- UN (2015). *Sustainable Development Goals 2030*. United Nations.

EU Policies on Agriculture:

- European Commission. (2021). *The Common Agricultural Policy at a Glance*. Retrieved from https://ec.europa.eu/info/food-farming-fisheries/key-policies/common-agricultural-policy/cap-glance_en
- European Union. (2020). *Farm to Fork Strategy: For a fair, healthy and environmentally-friendly food system*. Retrieved from https://ec.europa.eu/food/system/files/2020-05/f2f_action-plan_2020_strategy-info_en.pdf
- Matthews, A. (2022). *CAP 2023-2027: What's new?* Arc2020. Retrieved from https://www.arc2020.eu/cap-2023-2027-whats-new/

Co-funded by the European Union

InterGenic Project

SUPPORTING EU'S TWIN TRANSITIONS THROUGH INTERGENERATIONAL LEARNING, EXCHANGES OF KNOWLEDGE, AND JOINT ACTIONS

project number: 2023-1-ES01-KA220-ADU-000155225

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.

intergenic.eu

@intergenicproject

InterGenic EU Project

Co-funded by
the European Union

Module 2

2.2 crafts

intergenic.eu
@intergenicproject
InterGenic EU Project

Overview

2.2.1 Traditional Craftsmanship and Its Role in Sustainable Living
2.2.2 Evolution and Industrialization of Crafts
2.2.3 Modern Sustainability Challenges in Crafts
2.2.4 EU Policies Supporting Sustainable Crafts

Practical Activities
Additional Resources
References
Quiz (3 questions)

2.2.1 Traditional Craftsmanship and Its Role in Sustainable Living

Craftmanship is deeply rooted in human ingenuity and resourcefulness. Traditionally, craftspeople have always sought to make the most of available materials, often **repurposing and repairing items to extend their lifespan**. This practice was not only **economical but also essential** in times **when resources were scarce.**

Over the centuries, various cultures developed unique techniques for **mending and reusing materials**. E.g. the European tradition of darning textiles.

In recent years, there has been a resurgence of interest in these sustainable practices as part of a broader movement towards **environmental responsibility**. Modern crafters and designers are increasingly embracing repair and upcycling, blending traditional methods with contemporary aesthetics to create sustainable, functional, and beautiful items.

This revival highlights the enduring **value of craftsmanship in promoting a more sustainable way of living.**

Darning sampler, cotton, embroidered with silk, Zeeland, The Netherlands, mid-18th century.

2.2.1 Traditional Craftsmanship and Its Role in Sustainable Living

Traditional craftsmanship plays a crucial role in sustainable living by emphasizing the use of natural, **locally sourced materials and techniques that minimize waste.**
These time-honored practices promote the repair and reuse of items, **extending their lifespan** and reducing the need for mass-produced goods.

Within households or between individuals, this practice, when shared across generations, not only **preserves valuable skills** but also instills a **sense of environmental responsibility** and creativity in younger family members.

By integrating these techniques into daily life, we can transfer a legacy of sustainability and use of resources. A nice example are repair cafes.

2.2.2 Evolution and Industrialization of Crafts

The evolution and industrialization of crafts transformed traditional handcrafting into **mass production, significantly increasing the accessibility and affordability of goods.**

This shift, driven by the Industrial Revolution, introduced **mechanization and standardized processes**, but also led to a decline in unique, handmade items.

In response to the industrialization and mass production, there has been a **revival of artisanal craftsmanship**. Movements such as the Arts and Crafts Movement in the late 19th and early 20th centuries emphasized the value of handmade, high-quality goods.
This revival continues today, with a growing appreciation for unique, handcrafted items and a focus on supporting local artisans.

2.2.2 Evolution and Industrialization of Crafts

Modern craftsmanship has evolved to **integrate advanced technologies** while **also prioritizing sustainability.**

Techniques such as **3D printing and digital design tools** are being used alongside traditional methods to create innovative and sustainable products.
Additionally, there is a strong emphasis on **using eco-friendly materials and practices**, reflecting a commitment to environmental responsibility.

Many **households are embracing DIY projects**, upcycling, and repair as ways to reduce waste and create unique, personalized items.

2.2.3 Modern Sustainability Challenges in Crafts

Many artisans struggle to find and afford sustainable materials, which can limit their ability to produce eco-friendly products. This challenge is compounded by market constraints and the availability of resources.

Managing waste effectively is a significant challenge for modern craftspeople. Traditional methods often produce waste that needs to be minimized through innovative recycling and upcycling techniques.

The energy required for crafting processes can be substantial, and f**inding ways to reduce energy consumption** while maintaining quality is a critical sustainability challenge.

2.2.3 Modern Sustainability Challenges in Crafts

One of the most significant challenges in craftsmanship is **the preservation of traditional skills**. Many of these techniques, such as hand-weaving, pottery, and metalwork, are passed down through generations but are at risk of being lost in our fast-paced, technology-driven world.

Another challenge is **adapting traditional craftsmanship to modern materials and techniques**. While the essence of repair and sustainability remains the same, the materials available today are often different from those used in the past.
This requires a willingness to learn and experiment with new methods while maintaining the integrity of traditional practices.

In a culture that often favors convenience and disposability, **promoting the value of repair over replacement is a significant challenge.**
Many people are accustomed to discarding items rather than repairing them, leading to increased waste and environmental impact.

2.2.4 EU Policies Supporting Sustainable Crafts

The European Union (EU) has implemented several policies to support sustainable crafts, recognizing the sector's cultural, economic, and environmental significance.

One of the cornerstone policies is the **Ecodesign for Sustainable Products Regulation (ESPR)**, which came into force in July 2024. This regulation aims to improve the sustainability of products by setting requirements for durability, reusability, upgradability, and reparability[1].

Another significant initiative is the **Creative Europe Programme**, which supports the cultural and creative sectors, including crafts. This program emphasizes transnational creation, innovation, and mobility schemes for artists and professionals[2]. By providing financial support and fostering collaboration across borders, Creative Europe helps craftspeople access new markets, share knowledge, and innovate sustainably.

The EU also promotes sustainable crafts through its **Circular Economy Action Plan**, which includes measures to enhance product sustainability and resource efficiency. This plan encourages the use of recycled materials, reduces the environmental footprint of products, and supports the development of sustainable business models[1]. By integrating circular economy principles into the crafts sector, the EU aims to create a more sustainable and resilient economy, where resources are used more efficiently and waste is minimized.

Lastly, the **Crafting Europe Manifesto** outlines the EU's commitment to supporting the crafts sector through appropriate legislation, training, and innovation[3]. This manifesto emphasizes the importance of skill transmission to young people, ensuring that traditional crafts are preserved and adapted to modern sustainability challenges.

2.2.4 EU Policies Supporting Sustainable Crafts

The European Union’s policy towards crafts related to sustainability and repair emphasizes the importance of preserving traditional skills while adapting to modern needs.

The EU Strategy for Sustainable and Circular Textiles, part of the broader European Green Deal, aims to ensure that all textile products are durable, repairable, and recyclable by 2030[1]. This policy encourages the use of recycled materials, promotes repair and reuse practices, and seeks to reduce waste and environmental impact[2].

As senior mentors, your role is crucial in passing down these valuable skills and fostering a culture of sustainability.

By sharing your expertise and advocating for these practices, you can help shape a more sustainable future for the next generation of craftspeople[3].

Practical Activities: Activity 1 Textile

1. Introduction (15 minutes)

Welcome and Icebreaker: Introduce participants and share a fun fact about themselves related to crafts or sustainability.
Overview of Workshop: Explain the goals and structure of the workshop.
Importance of Textile Repair: Discuss the environmental and economic benefits of repairing textiles instead of discarding them.

2. Demonstration (20 minutes) Basic Repair Techniques:

Senior mentor demonstrates common repair techniques such as:

- **Darning**: Repairing holes in knitwear.
- **Patching**: Fixing larger holes or worn areas with fabric patches.
- **Sewing Buttons**: Reattaching or replacing buttons.

- **Tools and Materials**: Overview of essential tools (needles, thread, fabric scraps, etc.) and how to choose the right materials for repairs.

Practical Activities: Activity 2 textile

3. Hands-On Practice (45 minutes)
•Group Activity: Participants pair up, with each pair receiving a piece of clothing to repair.
•Guided Repair: Senior mentor provides step-by-step guidance as participants practice the techniques demonstrated.
•Troubleshooting: Mentor assists with any challenges and offers tips for successful repairs.

4. Creative Upcycling (20 minutes)
•Introduction to Upcycling: Discuss how to transform old textiles into new, useful items.
•Project Ideas: Examples include turning old jeans into tote bags or T-shirts into reusable shopping bags.
•Mini Project: Participants choose a small upcycling project to start, with guidance from the mentor.

5. Sharing and Reflection (15 minutes)
•Show and Tell: Participants share their repaired or upcycled items and discuss their experiences.
•Reflection: Discuss what they learned and how they can apply these skills in their daily lives.
•Q&A: Open the floor for any questions or additional tips from the mentor.

6. Conclusion (5 minutes)

Practical Activities: Activity 2 bicycle repair

1. **Introduction (15 minutes)**

- Welcome and Icebreaker: Brief introductions and an icebreaker activity to build rapport.
- Overview of Workshop: Explain the objectives and structure of the workshop.

2. Understanding Bicycle Basics (30 minutes)

- Types of Bicycles: Overview of different types of bicycles and their components.
- Basic Bicycle Anatomy: Introduction to the main parts of a bicycle (frame, wheels, brakes, gears, etc.).

3. Safety First (20 minutes)

- Safety Guidelines: Discuss safety precautions when repairing bicycles.
- Tools and Equipment: Introduction to essential tools and their safe use.

Practical Activities: Activity 2 bicycle repair

4. Hands-On Repair Sessions (2 hours)

- Small Group Activities: Divide participants into small groups, each led by a senior mentor.
- Repair Stations: Set up stations with different repair tasks (e.g., fixing a flat tire, adjusting brakes, tuning gears).
- Step-by-Step Guidance: Mentors provide step-by-step instructions and hands-on assistance.

5. Break (15 minutes)

- Refreshments and Networking: Opportunity for participants to relax and network.

6. Advanced Techniques (45 minutes)

- Common Issues and Fixes: Demonstrate how to diagnose and fix common bicycle problems.
- Preventive Maintenance: Tips on how to maintain bicycles to prevent future issues.

7. Q&A and Troubleshooting (30 minutes)

- Open Forum: Participants can ask questions and seek advice on specific issues.
- Troubleshooting: Mentors help troubleshoot any remaining problems.

8. **Wrap-Up and Feedback (15 minutes)**

Practical Activities: Activity 2 bicycle repair

Summary of Key Points: Recap the main lessons learned.

Feedback Session: Collect feedback from participants to improve future workshops.

Certificates of Participation: Distribute certificates to participants.

Materials Needed:

Various bicycles for repair

Basic repair tools (wrenches, tire levers, pumps, etc.)

Safety equipment (gloves, goggles)

Instructional handouts and guides

Refreshments for break time

Follow-Up:

Resource List: Provide a list of resources for further learning (books, websites, local bike shops).

Community Group: Create a community group (e.g., on social media) for ongoing support and knowledge sharing.

Practical Activities: Activity 3 repair household appliances

1. **Introduction** (15 minutes)
- Welcome and Icebreaker: Brief introductions and an icebreaker activity to build rapport.
- Overview of Workshop: Explain the objectives and structure of the workshop.
2. **Understanding Appliances** (30 minutes)
- Types of Appliances: Overview of common household appliances (e.g., toasters, blenders, vacuum cleaners).
- Basic Components: Introduction to the basic components and how they function.
3**. Safety First** (20 minutes)
- Safety Guidelines: Discuss safety precautions when repairing appliances.
- Tools and Equipment: Introduction to essential tools and their safe use.
4**. Hands-On Repair Sessions** (2 hours)
- Small Group Activities: Divide participants into small groups, each led by a senior mentor.
- Repair Stations: Set up stations with different appliances needing repair.
- Step-by-Step Guidance: Mentors provide step-by-step instructions and hands-on assistance.

Practical Activities: Activity 3 Repair household appliance

5. Break (15 minutes)

Refreshments and Networking: Opportunity for participants to relax and network.

6. Advanced Techniques (45 minutes)

- Common Issues and Fixes: Demonstrate how to diagnose and fix common problems.
- Preventive Maintenance: Tips on how to maintain appliances to prevent future issues.

7. Q&A and Troubleshooting (30 minutes)

- Open Forum: Participants can ask questions and seek advice on specific issues.
- Troubleshooting: Mentors help troubleshoot any remaining problems.

8. Wrap-Up and Feedback (15 minutes)

- Summary of Key Points: Recap the main lessons learned.
- Feedback Session: Collect feedback from participants to improve future workshops.
- Certificates of Participation: Distribute certificates to participants.

Practical Activities: Activity 3 Repair household appliance

Materials Needed:

- Various household appliances for repair
- Basic repair tools (screwdrivers, pliers, multimeters, etc.)
- Safety equipment (gloves, goggles)
- Instructional handouts and guides
- Refreshments for break time

Follow-Up:

- Resource List: Provide a list of resources for further learning (books, websites, local repair shops).
- Community Group: Create a community group (e.g., on social media) for ongoing support and knowledge sharing.

Additional Resources

References

1.Shift from Mass Production to Local Artisanal Production: Historically, craftsmanship was characterized by local, small-scale production, which inherently supported sustainability through limited resource use and reduced waste. In recent years, there has been a resurgence of interest in local artisanal production as a counter to mass production. This shift emphasizes quality over quantity, supporting local economies and reducing the environmental impact associated with large-scale manufacturing and long-distance transportation[1].

2.Integration of Circular Economy Principles: Traditional craftsmanship often involved repairing and repurposing materials, a practice that aligns well with modern circular economy principles. Today, there is a renewed focus on designing products with their entire lifecycle in mind, ensuring they can be easily repaired, reused, or recycled. This approach minimizes waste and maximizes resource efficiency, reflecting a sustainable evolution from past practices[2].

3.Adoption of Sustainable Materials and Techniques: Historically, craftsmen used locally sourced, natural materials, which were often more sustainable. Modern craftsmanship has seen a return to these roots, with an emphasis on using eco-friendly materials and sustainable techniques. This includes the use of organic fibers in textiles, non-toxic dyes, and renewable resources in various crafts. By adopting these practices, contemporary artisans are reducing their environmental footprint and promoting sustainability[3].

These evolutions highlight how traditional craftsmanship practices have been adapted and enhanced to meet modern sustainability goals, ensuring that the rich heritage of craftsmanship continues to thrive in a more environmentally conscious world.

QUIZ

1.General: Why is it important to preserve traditional crafts in the context of sustainability?

1. A) To increase production speed
2. B) To maintain cultural heritage and reduce environmental impact
3. C) To lower costs

2.General: How can senior mentors contribute to the sustainability of traditional crafts?

1. A) By keeping their knowledge to themselves
2. B) By teaching and sharing their expertise with younger generations
3. C) By switching to modern, mass-production methods

3.General: What is one socio-economic benefit of promoting sustainable crafts?

1. A) Increased waste production
2. B) Economic support for local communities
3. C) Decreased product quality

Feel free to use this quiz to spark discussions and inspire young people about the importance of sustainable practices in traditional crafts!

Co-funded by the European Union

InterGenic Project

SUPPORTING EU'S TWIN TRANSITIONS THROUGH INTERGENERATIONAL LEARNING, EXCHANGES OF KNOWLEDGE, AND JOINT ACTIONS

project number: 2023-1-ES01-KA220-ADU-000155225

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.

intergenic.eu

@intergenicproject

InterGenic EU Project

Co-funded by
the European Union

Module 2

2.3 Medicine/well-being/diet

intergenic.eu
@intergenicproject
InterGenic EU Project

Module Aims and Objectives

The aim of this module is to provide participants with a comprehensive understanding of six traditional sustainable practices—Agriculture/Cultivation, Crafts, Medicine/Well-being/Diet, Water Management, Architecture, and Transport—by exploring their historical roots, evolution, and relevance in the modern context. The module also aims to highlight contemporary challenges affecting these practices and examine how relevant EU policies address sustainability issues.

By the end of this module, participants will be able to:

1. Describe the history and evolution of six traditional sustainable practices.
2. Analyze the impact of modern challenges, such as climate change and resource depletion, on these practices.
3. Identify key EU policies that influence sustainable practices in the fields of agriculture, water management, architecture, transport, crafts, and medicine/well-being.
4. Compare traditional and modern approaches to sustainability in each of the six areas.
5. Propose strategies for adapting and preserving these practices in the face of current environmental and socio-economic challenges.

Overview

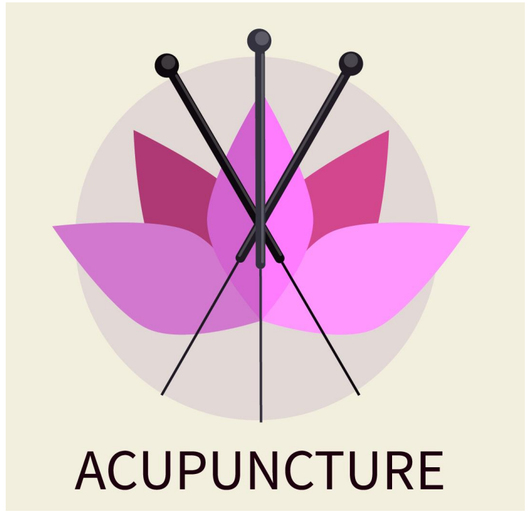
2.3.1 Traditional Medicine and Dietary Practices for Well-being
2.3.2 Evolution of Health and Dietary Systems
2.3.3 Current Challenges in Health, Medicine, and Diet
2.3.4 EU Policies on Public Health and Nutrition
2.3.5 Sustainable Medicine/Well-being/Diet practices and their Socioeconomic Implications

Practical Activity
Quiz (3 questions)
References

2.3.1 Traditional Medicine and Dietary Practices for Well-being

Historical approaches to medicine

Traditional medicine systems have existed for thousands of years and have been based on holistic approaches to health and well-being. These systems emphasise prevention, balance, and natural remedies that are aligned with the body's natural rhythms and needs.



Images source: Freepik

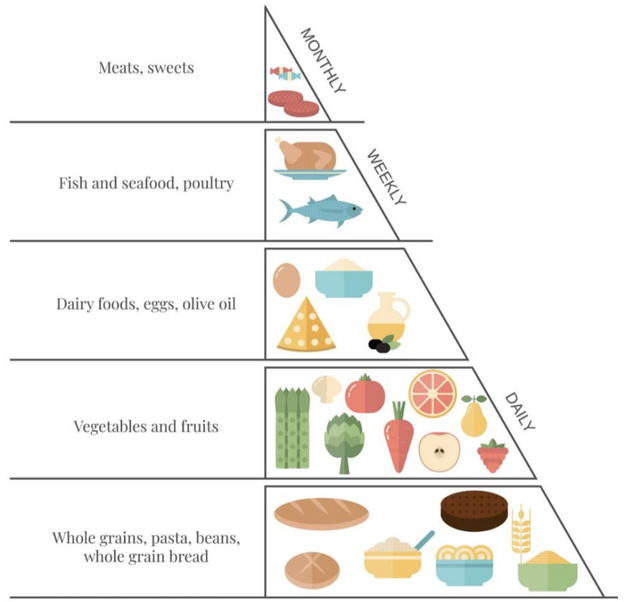
2.3.1 Traditional Medicine and Dietary Practices for Well-being

Nutrition and their Link to Local Ecosystems

Traditional nutrition practices were based on locally available resources, which naturally created diets that aligned with seasonal and regional food availability.

Mediterranean diets, rich in fruits, vegetables, grains, and olive oil, reflect the region's ecosystem.

Diets in coastal regions include fish and seafood, linking food sources to the environment.



Mediterranean Diet

Image source: https://www.kellyepowers.com/blog/how-to-create-a-healthy-mediterranean-diet-plate/

2.3.2 Evolution of Health and Dietary Systems

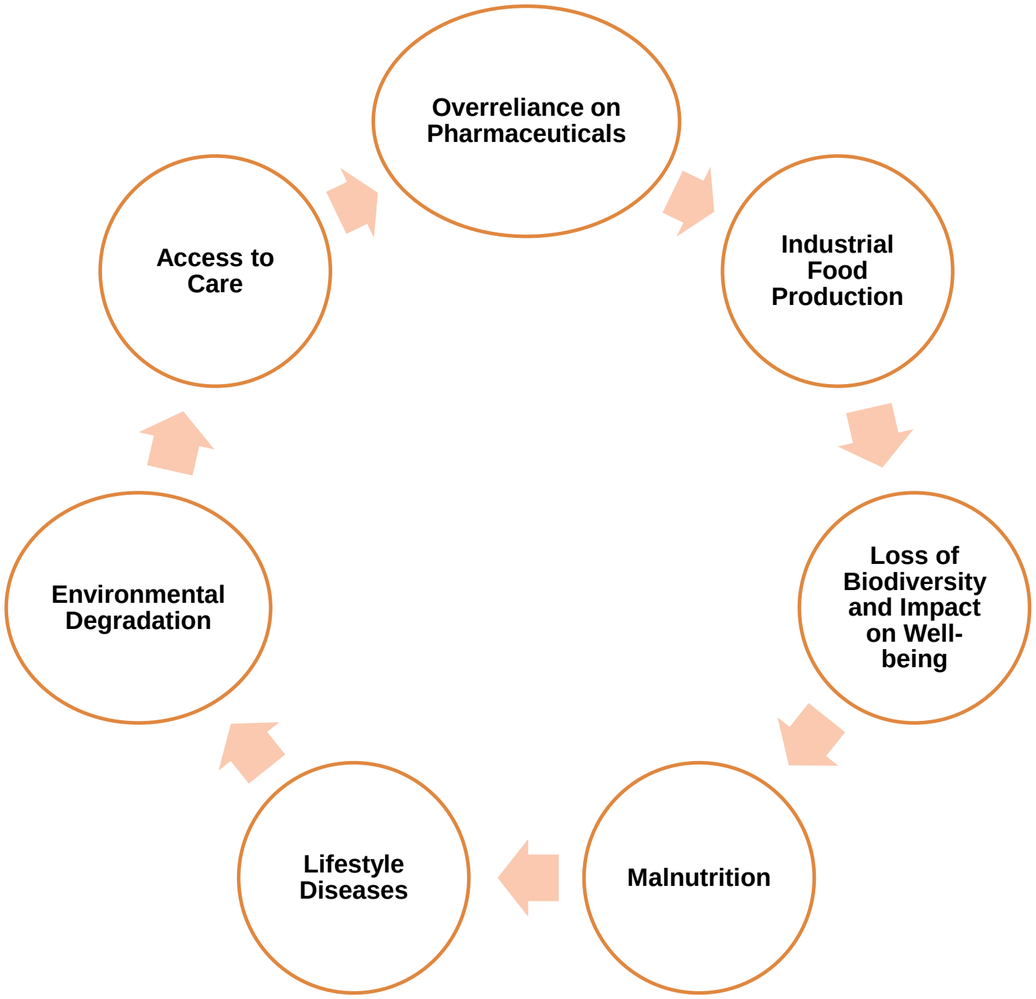
Traditional health systems and diets

- Holistic Approaches
- Community - Based Care
- Nutrition from local ecosystems

Modern Healthcare

- Scientific advances in medicine
- Institutionalization
- Pharmaceutical industry growth

2.3.3 Current Challenges in Health, Medicine, and Diet



2.3.4 EU Policies on Public Health and Nutrition

Sustainable Healthcare
EU policies promote preventative care, sustainable healthcare systems, and reduction of healthcare waste.

Promotion of Traditional Diets
The EU encourages the preservation of cultural food heritage, such as the Mediterranean diet, for its health benefits and ecological sustainability.

Shift Towards Organic, Local Food Systems
Policies like the EU Farm to Fork strategy aim to reduce chemical pesticides, fertilizers, and antibiotics in farming, promoting organic farming and local food production as healthier and more sustainable alternatives.

2.3.5 Sustainable Medicine/Well-being/Diet practices and their Socioeconomic Implications

Spain:

Belgium:

Cyprus:

Ireland:

Greece:

Romania:

Austria:

Activity 2.3

Activity 2.3:

Instructions: Think about why certain practices existed. You can look up information on the internet and see if there is any proven scientific basis for this practice.

Quiz

Medicine / Well-being / Diet Quiz

Question 1: What is a key characteristic of traditional medicine systems?
a) They prioritize surgery over prevention
b) They focus on curing illness with pharmaceuticals
c) They emphasize balance, prevention, and natural remedies
d) They are based on the use of synthetic chemicals

Question 2**: **How do traditional diets reflect the link between nutrition and local ecosystems?
a) They are based on imported foods
b) They are aligned with seasonal and regional food availability
c) They rely on year-round farming practices
d) They prioritize industrial food production

Question 3: What is one major consequence of overreliance on pharmaceuticals in modern healthcare?
a) Increased biodiversity
b) Development of antibiotic resistance
c) Reduction in healthcare costs
d) Increase in natural remedies

References

European Commission. *Farm to Fork Strategy – For a Fair, Healthy, and Environmentally-Friendly Food System*. European Union, 2020.

Food and Agriculture Organization of the United Nations (FAO). *The State of the World's Biodiversity for Food and Agriculture*. FAO, 2019.

Hippocrates. *Hippocratic Writings*. Edited by G.E.R. Lloyd, Penguin Classics, 1983.

Harvard T.H. Chan School of Public Health. "The Mediterranean Diet: A Heart-Healthy Eating Plan."

National Institute of Health (NIH). Dietary Patterns and Health Outcomes: Mediterranean Diet and Health.

Nair, Ranjit. "Herbal Medicine: Strengthening the Bridge Between Tradition and Modern Medicine." *Journal of Alternative and Complementary Medicine*, vol. 26, no. 5, 2020, pp. 345-356.

Patel, Raj. *Stuffed and Starved: The Hidden Battle for the World Food System*. Melville House, 2008.

World Health Organization (WHO). *Traditional, Complementary and Integrative Medicine: Report of the WHO Global Survey on Traditional Medicine*. WHO, 2019.

World Health Organization (WHO). *Global Report on Traditional and Complementary Medicine 2019*.

Co-funded by the European Union

InterGenic Project

SUPPORTING EU'S TWIN TRANSITIONS THROUGH INTERGENERATIONAL LEARNING, EXCHANGES OF KNOWLEDGE, AND JOINT ACTIONS

project number: 2023-1-ES01-KA220-ADU-000155225

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.

intergenic.eu

@intergenicproject

InterGenic EU Project

Co-funded by
the European Union

Module 2

2.4 Water Management

intergenic.eu
@intergenicproject
InterGenic EU Project

2.4.1 Traditional Water Management Systems

Europe has a rich history of traditional water management techniques, many of which are still studied today for their sustainable approaches.

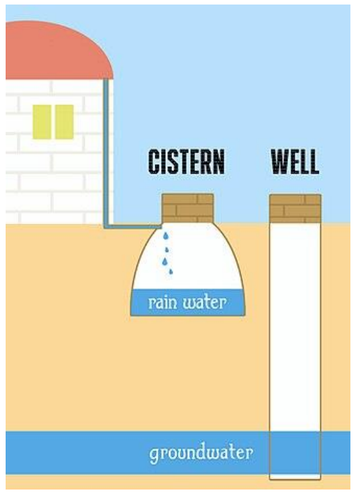
Early European civilizations developed various methods for managing water, particularly in agriculture and urban development.

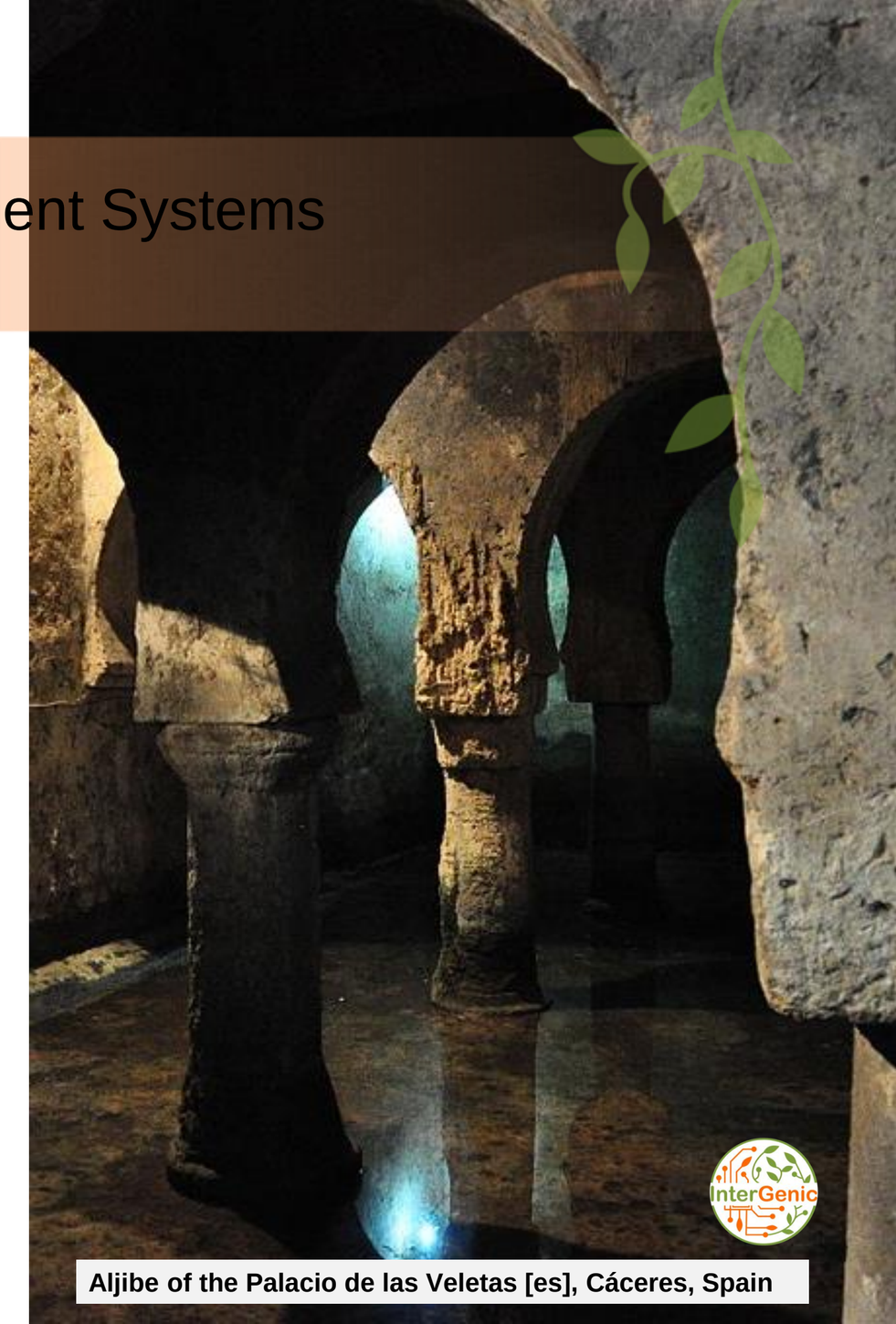
Roman Aqueduct of Ancient Nikopolis,Greece

2.4.1. Traditional Water Management Systems

Rainwater Harvesting in Southern Europe:
In Mediterranean regions like Greece and Spain, rainwater harvesting was a common practice, with **cisterns** used to collect and store rainwater. These cisterns were crucial for irrigation during dry seasons.

Even today, parts of Spain, especially in the Canary Islands, continue to use traditional methods of capturing and storing water from fog and rain.

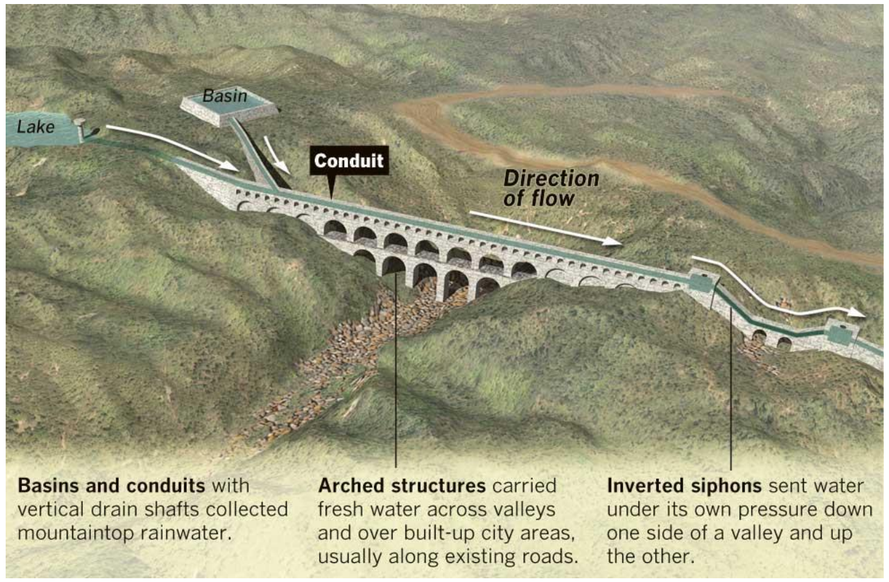


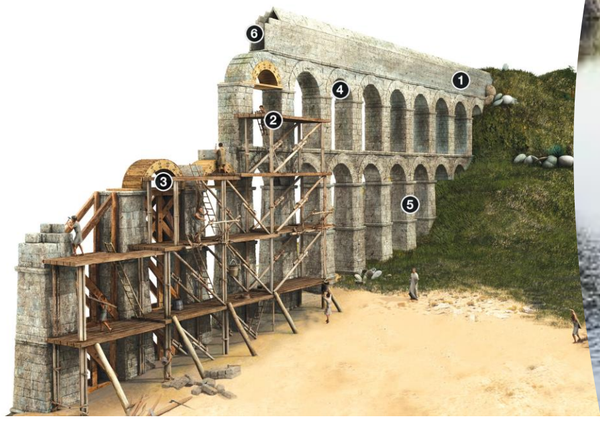


Aljibe of the Palacio de las Veletas [es], Cáceres, Spain

2.4.1 Traditional Water Management Systems

Roman Aqueducts Across Europe: The Romans constructed aqueducts across their European territories, with some of the most famous examples in France (Pont du Gard) and Italy (Aqua Claudia). These aqueducts were designed to bring water from natural sources to urban centers, supplying cities with clean drinking water and supporting public baths.

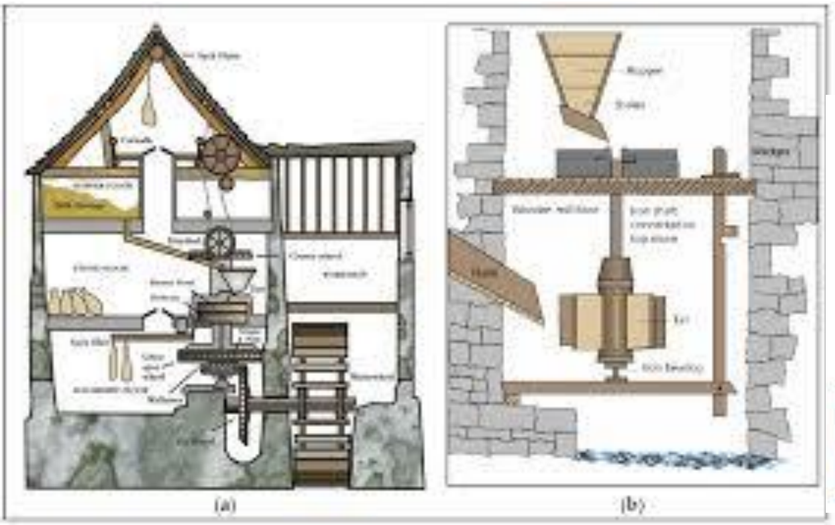


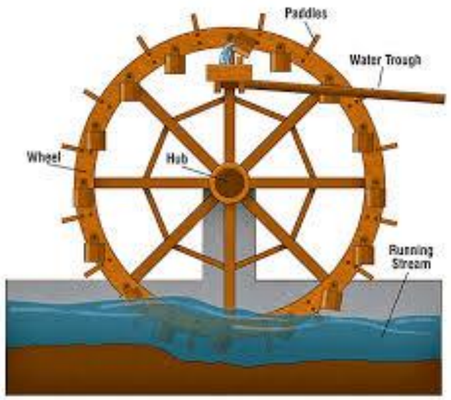


Pont du Gard Roman Aqueduct (France)

2.4.1 Traditional Water Management Systems

Medieval Canals and Watermills:
In the Low Countries (Belgium and the Netherlands), water management was crucial due to frequent flooding and low-lying geography. Medieval Europeans developed intricate canal systems and watermills to control water levels for both irrigation and drainage.






Bayeux Water Mill

2.4.1 Traditional Water Management Systems

Historical Hydrological Engineering in Europe:

The Dutch have long been pioneers in water management, constructing dikes and canals since the medieval period to protect their lands from the sea. The **Delta Works**, one of the largest infrastructure projects in the world, is a modern evolution of this tradition.

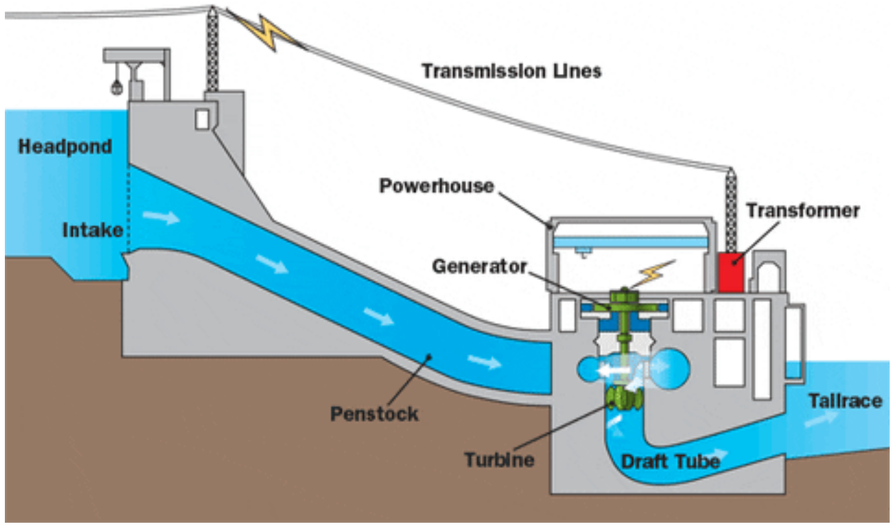
2.4.2 Evolution of Water Management Techniques

Modern Infrastructure in Europe:
The 19th and 20th centuries saw a transformation in Europe’s water infrastructure, including the construction of **large dams, reservoirs, and extensive water supply systems**. These projects were critical to managing water resources in growing urban and industrial areas.

Hydropower in the European Union:
In 2020, **hydropower** contributed around 36% of the EU's renewable energy production, making it the largest source of renewable electricity in the EU. However, this also raises questions about the environmental sustainability of relying heavily on dams for energy.

2.4.2 Evolution of Water Management Techniques

The Ebro Dam in Spain and the Verzasca Dam in Switzerland are two major examples. These dams provide not only water storage but also hydroelectric power.



Grande Dixence Dam (Switzerland)

.

2.4.2 Evolution of Water Management Techniques

Water Infrastructure in the Alps: The Alps region has extensive dam and hydropower systems, including the Grande Dixence Dam in Switzerland and dams in Austria and France. These dams are essential for both water supply and energy generation but have led to ecosystem changes in alpine rivers and valleys.

Environmental Impact of Water Infrastructure in the EU:

The construction of large dams **has led to the alteration of river ecosystems,** such as in the Rhine and Danube rivers. The Rhine River, for instance, has seen a 90% decline in its original wetland areas, affecting biodiversity.

Water management in Eeklo Belgium

2.4.3 Modern Challenges in Water Management

- **Water Scarcity** : Southern Europe, particularly Spain, Greece, and Italy, faces significant water scarcity challenges. Southern Spain, for example, is experiencing severe water stress due to agricultural demand, tourism, and climate change. The region has a water deficit of over 500 million cubic meters annually.
- **Drought**: The 2022 European Drought was the worst in 500 years, affecting two-thirds of the continent, with major rivers like the Danube and Rhine experiencing historically low water levels. This drought affected agriculture, water supply, and energy production, with crop yields in France and Germany significantly reduced.
- **Pollution of European Water Bodies**:

- Agricultural runoff remains a significant source of water pollution in the EU. For example, in the Baltic Sea, eutrophication caused by excess nitrogen and phosphorus from fertilizers has led to severe "dead zones" where aquatic life cannot survive.
- Plastic pollution is also a major issue. The Mediterranean Sea, which borders several EU countries, is one of the most plastic-polluted bodies of water in the world, with about 229,000 tons of plastic entering the sea every year.

- **Effects of Climate Change on EU Water Resources**: In the Alps, glaciers that provide freshwater to much of Central Europe are melting rapidly. By 2100, more than 90% of Alpine glaciers may have disappeared, threatening water supplies in Germany, France, Italy, and other neighboring countries.

.

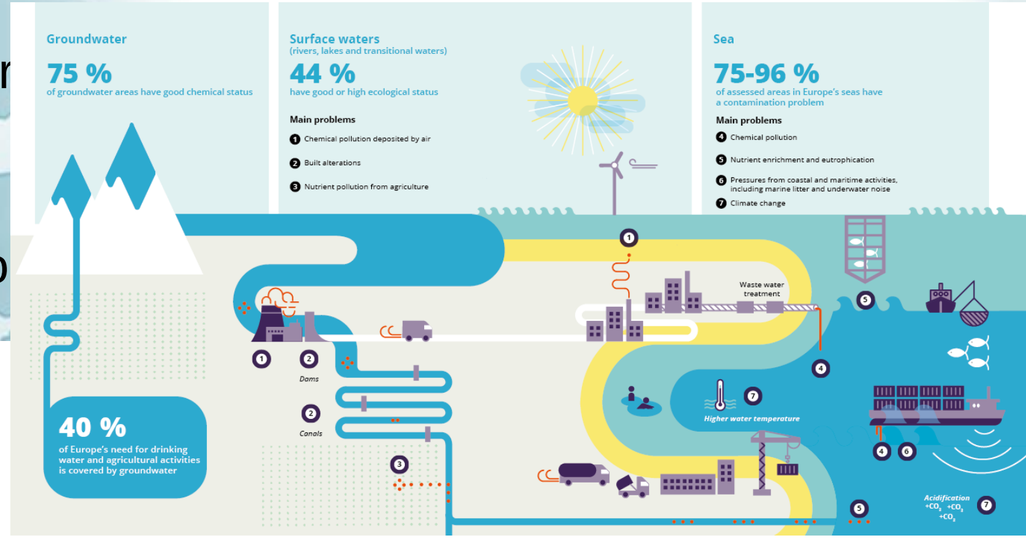
2.4.3 Modern Challenges in Water Management

Floods are the most common and most costly natural disasters in Europe. They are becoming more frequent due to climate change and have devastating effects, endangering lives and leading to heavy economic losses. Floods can also release pollutants stored in the ground and spread them even more widely. Floods may also destroy wetland areas and reduce biodiversity.

It is expected that the coming decades are likely to see a higher flood risk in Europe and greater economic damage. With the right measures, we can reduce their likelihood and limit their impact. Integrated flood risk management must focus on sustainable water management and measures that strengthen the resilience of nature and society to extreme weather events.

2.4.4 EU Policies on Water Management

The EU Water Framework Directive (WFD): The Water Framework Directive, implemented in 2000, is a cornerstone of EU water policy. It aims to achieve "good ecological and chemical status" for all EU water bodies by 2027. Member states must regularly report on the status of their water bodies and outline their progress toward these goals. According to the European Environment Agency (EEA), as of 2020, 60% of EU surface water bodies were still not in good ecological condition, despite efforts to improve water quality.



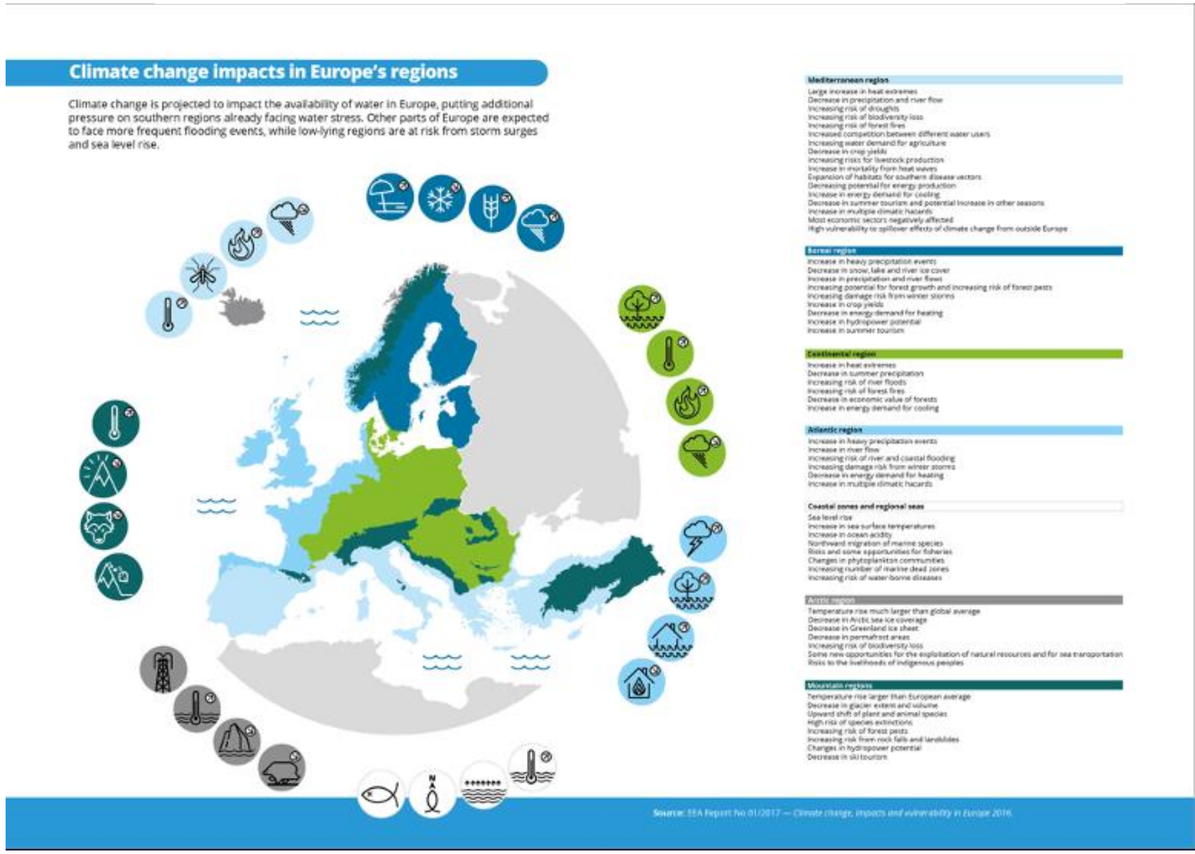
EU Clean Water Initiatives:
The Urban Waste Water Treatment Directive and the Nitrates Directive are essential tools in combating water pollution across Europe.

2.4.4. EU Policies on Water Management

Water Efficiency in Agriculture:
The EU's Common Agricultural Policy (CAP) promotes sustainable water use through technology like precision irrigation in water-scarce regions, such as Southern Spain and Portugal.

Climate Change Adaptation:
Several EU countries have implemented National Adaptation Strategies to address water shortages. For example, the Netherlands has developed an innovative strategy called Room for the River, which allows rivers to flood certain areas in a controlled manner to prevent widespread damage during high-water events.

Climate ADAPT
SHARING ADAPTATION INFORMATION ACROSS EUROPE



2.4.4. EU Policies on Water Management

- **The Role of EU Transboundary Water Management:**

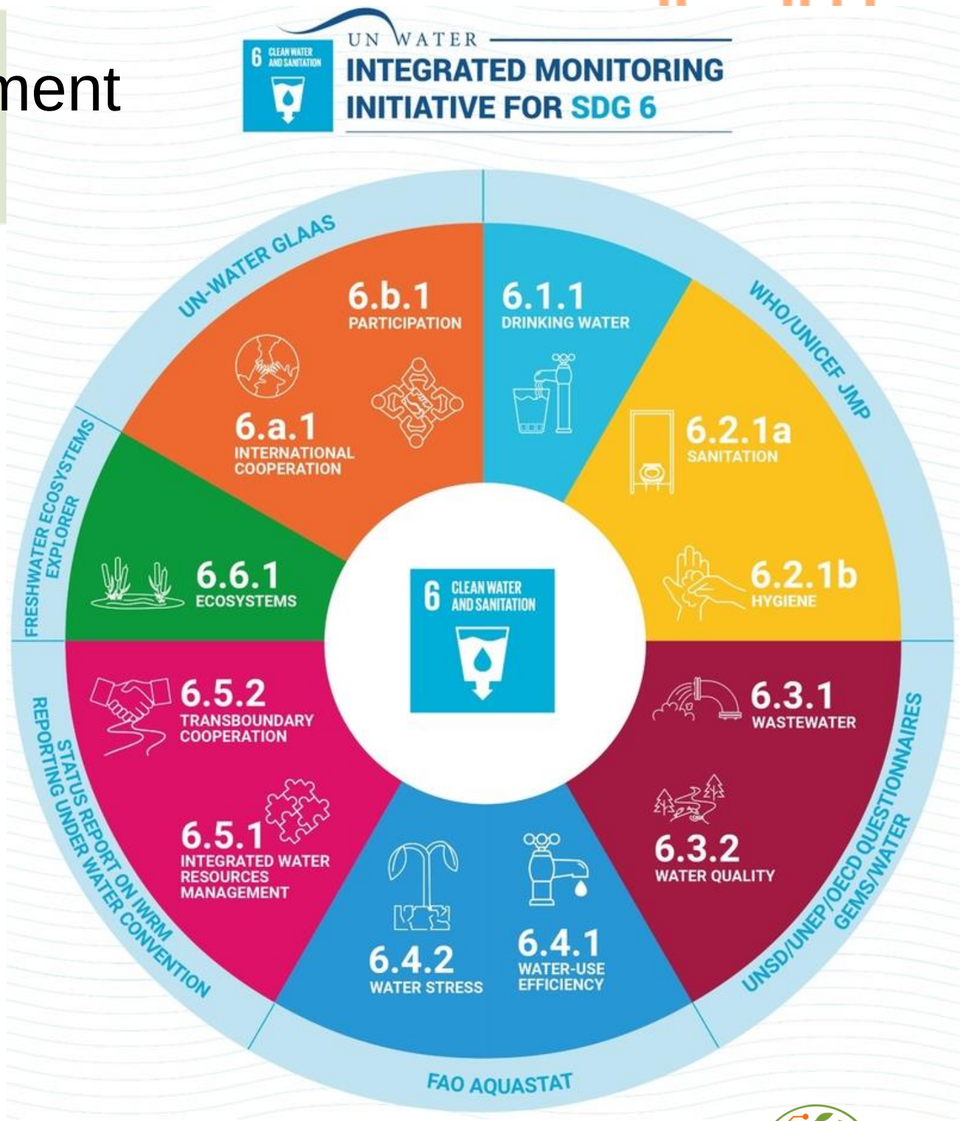
The Danube River Protection Convention, signed by all countries in the Danube River Basin, illustrates successful cooperation in managing shared water resources. This collaborative effort underpins the EU's broader goal of transboundary water management.

- **Public Participation in Water Management:**

The WFD emphasizes the importance of public participation in water management. In France, citizens are actively involved in local water management committees, which help shape policies that directly affect water use in their communities.

- **The UN's Sustainable Development Goals:**

from No Poverty (#1) to Partnership for the Goals (#17) - are meant to set the global development agenda through the end of this decade. Goal 6 - Clean Water and Sanitation - includes 8 targets and 11 indicators, which collectively address a range of water issues, from drinking water to water-use efficiency.



2.4.4. EU Policies on Water Management – Sewage treatment

2.4.5 Spain: Community Involvement in Irrigation Systems

Agricultural communities in southern Spain, particularly in Murcia and Valencia, participate in managing traditional irrigation systems like **acequias**. These centuries-old channels, many of which were modernized after 1900, are still used by farmers to irrigate fields.

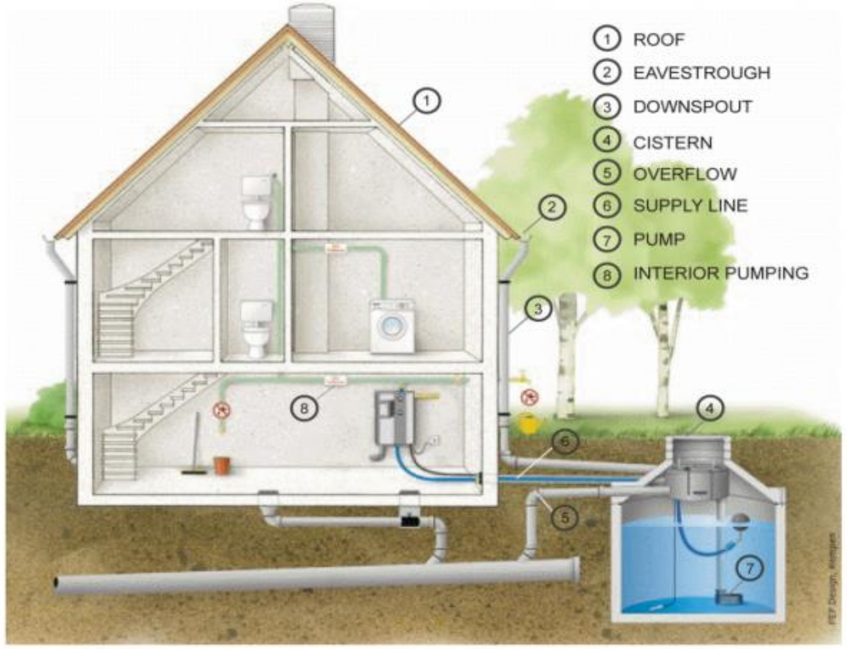
- Daily Life Impact:
- Farmers in these regions rely on these water systems to irrigate crops such as citrus fruits, vegetables, and almonds, which are integral to both local consumption and Spain's agricultural exports.
- Community members regularly come together to maintain the canals, fostering social cohesion and a sense of shared responsibility for water management.

2.4.5 Greece: Use of Rainwater Harvesting Systems

- In rural and island areas of Greece, particularly on islands like Crete and Santorini, citizens have long used rainwater harvesting systems. These systems, modernized after 1950, involve collecting and storing rainwater in **cisterns for domestic use and irrigation**, especially in areas with limited access to freshwater.

Daily Life Impact:

- Citizens regularly use harvested rainwater for household chores, watering gardens, and small-scale agriculture. This practice reduces dependence on municipal water supplies and helps residents cope with seasonal water shortages.
- Rainwater harvesting is also a crucial method for maintaining sustainability in areas prone to drought, and many families in these regions continue to maintain their cisterns, contributing to water conservation efforts.



Source: PEP Design, Kempen

2.4.5 Austria – Water Campaigns

In the 1970s, Austria initiated **widespread public campaigns to encourage water conservation**, especially in urban areas like Vienna. Citizens were encouraged to install low-flow toilets, water-saving showerheads, and to practice mindful water usage, such as turning off the tap while brushing their teeth.

Daily Life Impact:

- Austrians today are highly conscious of water use in their homes, and water-saving appliances are common in both urban and rural households. Many citizens participate in rainwater collection to water plants or for other non-potable uses.
- Sustainable water use is ingrained in Austrian culture, supported by ongoing education and awareness campaigns, helping reduce domestic water consumption and contributing to the country’s environmental sustainability efforts.

2.4.5. Belgium: Urban Water Management and Green Roofs

Citizens in Brussels and other urban areas have increasingly participated in **green roof and permeable pavement** initiatives since the 2000s. These solutions are part of the city's efforts to mitigate urban flooding by encouraging individuals and businesses to install green roofs that absorb rainwater, reducing runoff.

Daily Life Impact:

- Homeowners and businesses in Brussels who adopt these green infrastructure solutions help alleviate pressure on the city's drainage systems, contributing to flood prevention in high-risk areas.
- These practices also contribute to urban biodiversity, with green roofs creating small habitats for birds and insects, improving the overall quality of urban life.
- Citizens see tangible benefits in lower flood risk, cooler building temperatures, and even financial incentives or tax breaks offered by the government for green infrastructure adoption.

2.4.5. Ireland: Water Conservation During Drought Periods

In the 21st century, Irish citizens have been affected by water restrictions during drought periods, particularly in the summers of 2018 and 2020. In response, households were encouraged to reduce water consumption by limiting garden watering, taking shorter showers, and using water-saving devices.

Daily Life Impact:

- During periods of drought, many Irish households adopt temporary changes, such as using **rain barrels** to collect water for gardening or adjusting dishwashing and laundry habits to conserve water.
- These practices have raised awareness of the importance of water conservation and fostered a culture of sustainable water use, with citizens becoming more mindful of their daily water consumption.

2.4.6. Cyprus: Household Water Tanks for Domestic Use

Due to water scarcity in Cyprus, it became common for households, particularly in urban areas like Nicosia and Limassol, to install **water tanks** on their roofs starting in the 1970s. These tanks store water for domestic use during periods when water supply is limited or intermittent.

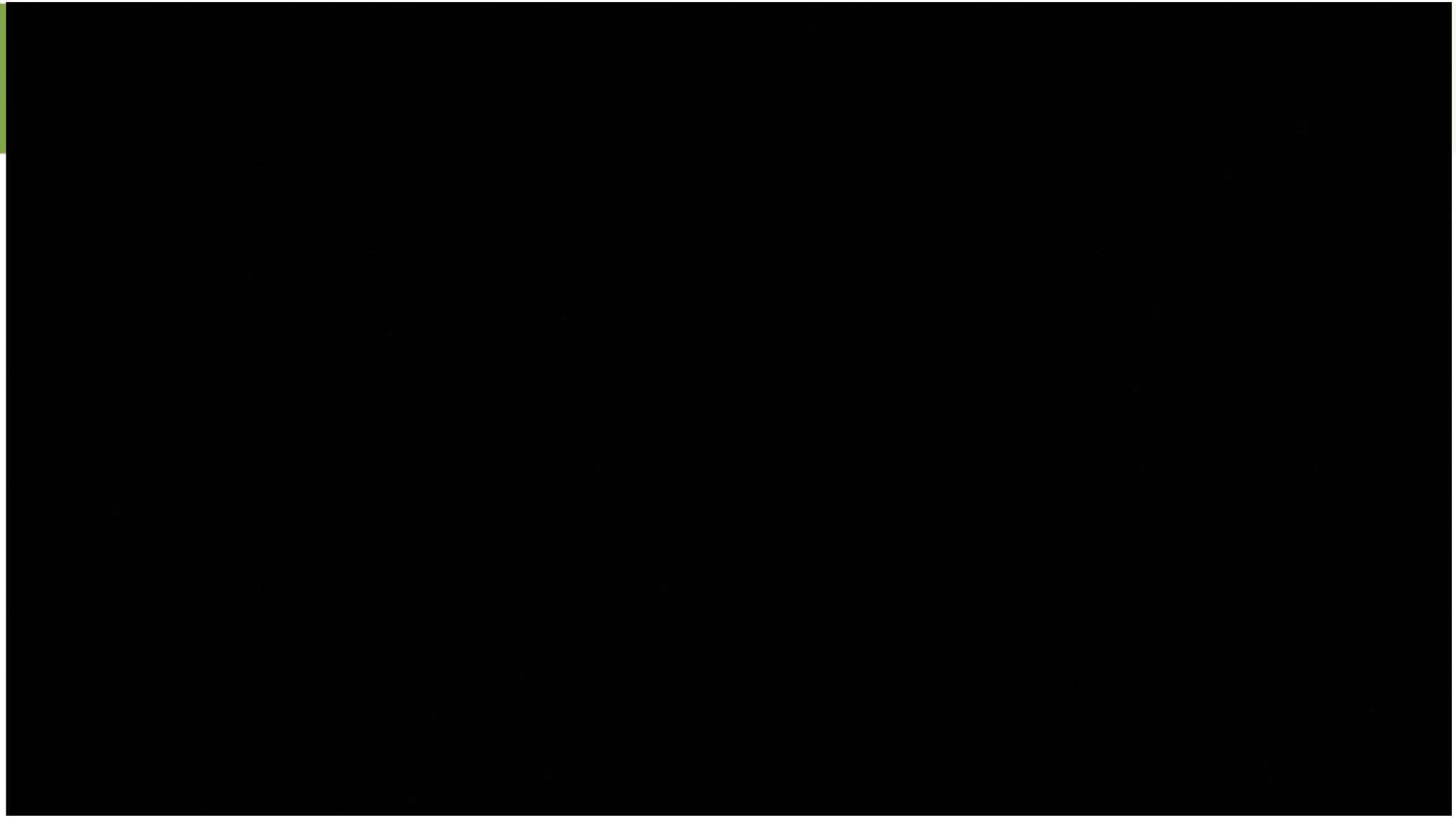
Daily Life Impact:

- Many Cypriot families still rely on these water tanks to ensure a reliable supply of water for cooking, cleaning, and personal hygiene, particularly during the hot summer months when water shortages are most common.
- This system helps households manage limited water resources efficiently and has become a standard feature of daily life, with families carefully monitoring and conserving their stored water.

2.4.6. Romania: Community Well Systems in Villages (Post-1900)

In rural areas throughout Romania, particularly in regions like Oltenia and Banat, many villages depend on **community wells** for their daily water needs. These wells, often maintained collectively by village communities, have been a common practice throughout the 20th century and continue to serve as a primary water source for many households. Daily Life Impact:

- For villagers, these wells are a vital source of water for drinking, cooking, cleaning, and irrigation. Families typically draw water from the wells several times a day, making the maintenance of these water sources a crucial community responsibility.
- The communal nature of maintaining wells fosters social bonds among residents and reinforces the importance of sustainable water management within rural communities. It also ensures that water is accessible for agricultural activities crucial to local economies.



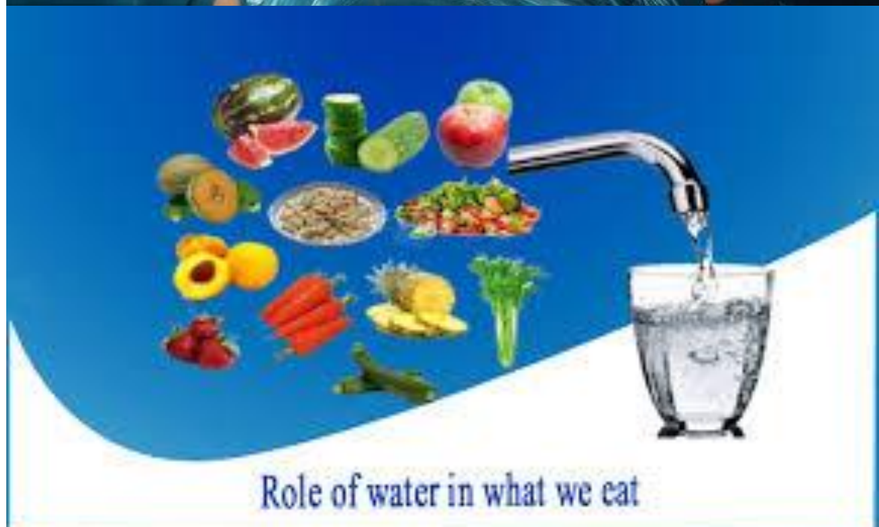
Activity 2.1 – Water Calculator & The Water We Eat

Calculate Your Water Footprint

WaterCalculator.org is the best water-use calculator I've found. It's easy to use and very visual for students, letting them each take the quiz and determine their household's estimated use.

At the end it provides a long list of tips for different areas of the home—the kitchen, outside, the bathroom. However, this water they see coming out of faucets is only a fraction of what they ultimately use.

The Water We Eat is a great follow-up because it helps students see all the "hidden" water used to grow their food. This interactive infographic takes just a minute or two to show.



Activity 2.2 - Fund a Water Project

https://www.kiva.org/

Kiva is a non-profit micro-loaning platform that allows people around the world to borrow small amounts of money that traditional banks don't usually fund. These loans are life changing for people and are used to fund everything from growing small businesses to covering medical procedures, making housing improvements to paying education expenses.
You can make a loan for as little as $25 and they really are loans. Once the borrower has paid it back, you have that $25 to loan again! See if you can get your community or friends to donate some money to start your class account.

Search for people requesting water-related loans, like households and communities trying to build wells, install water filtration systems, or improve access to sanitation.
Have students browse, choose, and nominate a person or group to fund. Then hold the class vote.
Borrowers repay little by little. Once your account is back up to $25 you'll be able to fund a new loan, so one donation will sustain your Kiva project year after year.

QUIZ

I. Multiple Choice:

1. Which EU country is most affected by water scarcity due to climate change?
    a) Germany
    b) Spain
    c) Sweden
    d) Ireland

(Correct answer: b) Spain)

2. Which traditional water management system involves channels that direct water for irrigation?
    a) Canals
    b) Wells
    c) Rainwater tanks
    d) Aqueducts
    (Correct answer: a)

3. What is one of the objectives of the EU Water Framework Directive?
    a) To increase water prices in urban areas
    b) To ensure all water bodies achieve “good status”
    c) To promote bottled water consumption
    d) To allow for free water access in rural areas
    (Correct answer: b)

QUIZ

4. How did the construction of large dams affect ecosystems in Europe in the 20th century?
   a) Increased biodiversity in rivers
   b) Improved water quality
   c) Altered fish migration patterns and reduced biodiversity
   d) Reduced soil erosion along riverbanks
   (Correct answer: c)
5. What is one of the main causes of water scarcity in Europe today?
   a) Water pollution from industrial activities
   b) Decreasing population
   c) Excessive rainfall
   d) Urban sprawl
   (Correct answer: a)

II. True/False:

The Water Framework Directive requires EU member states to achieve good water quality by 2027. (True)
The "acequia" irrigation system, still used in Spain, relies on modern machinery for water distribution. (False)
One of the goals of the EU’s Clean Water initiatives is to promote rainwater harvesting across Europe. (True)
Water conservation efforts in Europe have focused solely on reducing agricultural water use. (False)

III. Short Answer:

Which one of the water management systems introduced, do you consider as the best?

Additional Resources

1. Bibliography

https://bassa.ro/omnia-photo-fantanile-olteniei-mmxvi-the-water-wells-of-oltenia-mmxvi/
https://www.wareg.org/articles/eu-water-acquis-a-comprehensive-guide/
EEB Handbook on EU Water Policy under the Water Framework Directive
https://www.rivernet.org/general/docs/handbook.pdf
The EU drinking water directive: a comprehensive guide, https://www.bnovate.com/post/drinking-water-directive

2. Video

Digital dilemma: tech's impact on water management in Europe
Water Innovation Europe 2024 I Towards a Water Smart Strategy
Vienna's flood defense system explained | DW News
EU Green Week focuses on water management in the face of flooding risk
Water Europe New Vision - Towards a Water-Smart Society
Acequia: More Than a Water System
https://youtu.be/EUhkTA8JyYU?t=117
How to HARVEST RAINWATER from your roof

3. Podcasts

What if Europe ran out of water? [Science and Technology Podcast] - https://www.youtube.com/watch?v=xH3TErPluk4
Will Europe’s next crisis be a water crisis? https://www.youtube.com/watch?v=xyUriBVGiNI –

4. Additional Activities

https://www.swfwmd.state.fl.us/residents/education/hands-activities

Co-funded by the European Union

InterGenic Project

SUPPORTING EU'S TWIN TRANSITIONS THROUGH INTERGENERATIONAL LEARNING, EXCHANGES OF KNOWLEDGE, AND JOINT ACTIONS

project number: 2023-1-ES01-KA220-ADU-000155225

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.

intergenic.eu

@intergenicproject

InterGenic EU Project

Co-funded by
the European Union

Module 2.5

Traditional and Sustainable Architecture

intergenic.eu

@intergenicproject

InterGenic EU Project

Aim and Objectives

Aim

The aim of this module is to provide participants with an understanding of how traditional architectural practices and sustainable design principles can be revived and integrated into modern construction. This module emphasizes the role of intergenerational knowledge exchange in promoting sustainable solutions for future generations.

Objectives

To explore traditional sustainable architecture techniques, such as the use of natural materials and passive design principles, and how these can inform contemporary sustainable building practices.

To demonstrate the impact of modern architecture on sustainability, focusing on the environmental costs of industrial materials like concrete and steel.

To address the challenges faced in adapting historic buildings to meet modern sustainability standards while preserving cultural heritage.

To encourage intergenerational learning, where younger participants learn sustainability skills from older generations and apply these practices to create energy-efficient and climate-resilient buildings.

History

Use of Natural Materials (c. 10,000 BCE – 4,000 BCE):

- Early civilizations used natural materials like mud, stone, and wood for shelters, providing insulation and durability

Ancient Egyptian and Mesopotamian Architecture (c. 4,000 BCE – 1,000 BCE):

- Egyptians and Mesopotamians used courtyards and thick mud-brick walls to regulate temperatures in desert climates.

Ancient Greek Passive House Design (c. 500 BCE – 200 BCE):

- Ancient Greeks oriented buildings for optimal sunlight and airflow, creating early energy-efficient designs.

They built south-facing homes with shaded porticos to maximize warmth in winter and minimize heat in summer, creating early models of **energy-efficient dwellings**.

Different European regions and their traditional buildings

- Mediterranean Region:
  - Materials & Techniques: Stone, clay, and adobe for thermal mass. Whitewashed walls reflect sunlight and lime desinfects the walls preventing mold.
  - Design Features: Courtyards for ventilation, small windows reduce heat gain.
  - Example: Trulli houses (Puglia, Italy) – thick limestone walls and conical roofs resist humidity and insulate interiors.

- Alpine & Central Europe:
  - Materials & Techniques: Timber and stone for stability and insulation.
  - Design Features: Steep roofs shed snow, recessed windows for insulation, compact forms minimize cold exposure.
  - Example: Chalet-style homes (Switzerland, Austria) – built with local wood and sloped roofs to withstand harsh winters.

- Northern Europe & Scandinavia:
  - Materials & Techniques: Timber frames, sod roofs, and wooden cladding.
  - Design Features: Sod roofs provide insulation and retain heat.
  - Example: Scandinavian Hytte – green roofs blend with the landscape and reduce heating needs.

Evolution of Architecture and its impact on sustainability
Concrete and Rebar

Impact of Concrete on Traditional Architecture & Sustainability

- Introduction of Concrete and Rebar:
  - Widespread use of concrete and steel rebar in the 20th century transformed traditional architecture, replacing natural materials like stone, clay, and timber. Construction nowadays makes for **35% of the EU CO2**
  - Concrete provided structural strength but **disrupted the thermal and environmental balance** achieved by traditional materials.
- Reduced Sustainability:
  - High Carbon Footprint: Concrete production is **energy-intensive** and a major contributor to CO_2 emissions.
  - Non-Decomposable Waste: Unlike natural materials, concrete, steel, and synthetic components do not decompose, leading to **significant environmental harm when buildings are demolished**.
  - Resource Extraction: The demand for cement, sand, and gravel depletes natural resources and **disrupts ecosystems.**
- Environmental Consequences:
  - Modern buildings often generate **non-recyclable debris** that **ends up in landfills**.
  - Synthetic insulation, coatings, and chemical additives further increase the **toxicity of construction waste**.
- Contrast with Traditional Methods:
  - Traditional buildings used local, biodegradable materials that aged naturally and were recyclable or reusable.
  - The shift to concrete and rebar reduced adaptability and increased environmental impact.

Challenges in Modern Sustainable Architecture in Europe

- High Costs of Sustainable Materials & Technologies:
- Challenge: Advanced materials (e.g., low-emission concrete, green insulation) and technologies (e.g., smart energy systems) are costly, limiting adoption.
- Impact: Many EU countries struggle to finance sustainable projects, especially in economically disadvantaged regions.

- Stricter EU Regulations and Compliance:
- Challenge: The EU's stringent sustainability requirements (e.g., Energy Performance of Buildings Directive) create high compliance costs and complex approval processes.
- Impact: Smaller firms and local builders face difficulties in meeting these standards, slowing down sustainable construction.

- Retrofitting Historical Buildings:
- Challenge: Adapting Europe’s vast heritage of historical buildings to meet modern sustainability standards without compromising cultural value.
- Impact: Retrofitting is costly and complex, often involving delicate balancing of energy efficiency with preservation of original features.

EU Policies on sustainable architecture

- European Green Deal:
- Aims to make Europe the first climate-neutral continent by 2050.
- Focuses on reducing greenhouse gas emissions and promoting circular economy principles in the construction sector.

- Energy Performance of Buildings Directive (EPBD):
- Sets minimum energy performance requirements for new and renovated buildings.
- Introduces nearly Zero-Energy Buildings (nZEB) standards, promoting energy efficiency and the use of renewable energy sources.

- EU Taxonomy for Sustainable Activities:
- Provides a classification system for sustainable economic activities, including construction and real estate.
- Guides investment towards green building projects and sustainable development, encouraging private and public funding.

Practical activities - Workshop on Building with cob

testing can be done indoors, as long as materials are provided

Workshop Objectives:

- Educate young people about traditional cob construction.
- Provide hands-on experience in soil testing, cob mixing, and plastering.
- Promote intergenerational learning with seniors as facilitators.

Workshop Structure:

- Soil Testing and Preparation: Learn to identify suitable soil types through hands-on tests.
- Cob Building Techniques: Mixing and building small sections using sand, clay, and straw.
- Plastering Techniques: Applying natural plaster for protection and aesthetics.

Sustainability Focus:

- Cob is a sustainable material with excellent insulation properties and low environmental impact, making it a valuable technique for modern eco-friendly building practices. Cob is also extremely cheap, and often structures build by it are at the very location where the soil contains clay.

Testing soil for Clay content - Soil Ribbon Test

Making of the mixture
Earth, Straw, Sand, Water

Introduction to different mixes, for ramming earth, plastering, repairing cracks.

For plastering specifically, depending on the content of clay in the earth, only 1 third of the mix should be earth.

For ramming, only earth can be used.

For repairs more straw is needed and less sand.

Plastering with earth

Works just as it does with any other plaster mix, but only natural materials are used and mistakes can be repaired virtually for free.


Brushing off the cracks with
water

Additional Resources

Video: "How To BUILD A RAMMED EARTH WALL: Sustainable & STRONG!"

- **Description**: – Youtube video on building a structure with rammed earth, one of the techniques for building with earth.
- **Access**: https://youtu.be/VA-9d9_OhLk?feature=shared

Video: “Earthen Floor sealed with Oil”

- **Description**: A step by step tutorial on making an earthen floor, sourced from a mix of materials, such as clay, sand, and straw, similar to cob and adobe.
- **Access**: https://youtu.be/abzqjuhlfP4?feature=shared

Video: "Evaluate Site Soil for Natural Building: How to Do a Ribbon Test"

- **Description**: Video on how to test earth for its clay content, and know whether it is good for building or not.
- **Access**: https://youtu.be/2MUnGBXjtGg?feature=shared

Article: "Modern Cob House Building

Build your own mortgage-free home using low-cost and local materials with modern cob-building skills. "

- **Description**: An informative article on different types of building and pros and cons of COB houses
- **Access**: https:// www.motherearthnews.com/sustainable-living/green-homes/cob-building-basics-zm0z13onzrob/

References

1.UNEP’s Practical Guide to Climate-Resilient Buildings & Communities
Access: https://www.unep.org/resources/practical-guide-climate-resilient-buildings

2. UN Environment Programme (UNEP) on Sustainable Buildings
Access: https://www.unep.org/topics/cities/buildings-and-construction/sustainable-buildings

3. Economic and Social Benefits of Sustainable Buildings
Access: https://earth.org/exploring-the-economic-and-social-benefits-of-sustainable-buildings/

4. Materials Encyclopedia - Cob Walls
Access: https://endeavourcentre.org/resources-for-building-green/free-encyclopedia-of-sustainable-building-materials/walls/cob/

QUIZ

What is the percentage of CO_2 emissions contributed by the construction sector in the EU?

- A. 10%
- B. 35%
- C. 50%

Which ancient civilization is credited with the invention of passive house principles?

- A. Ancient Greeks
- B. Ancient Egyptians
- C. Ancient Romans

What are the benefits of building with earth for the environment?

- A. Lower carbon footprint, low cost, degradable materials and energy consumption.
- B. Increases chemical additives in soil and water.
- C. Requires extensive use of non-renewable resources.

QUIZ

What is the percentage of CO_2 emissions contributed by the construction sector in the EU?

- A. 10%
- **B. 35%**
- C. 50%

Which ancient civilization is credited with the invention of passive house principles?

- **A. Ancient Greeks**
- B. Ancient Egyptians
- C. Ancient Romans

What are the benefits of building with earth for the environment?

- **A. Lower carbon footprint, low cost, degradable materials and energy consumption.**
- B. Increases chemical additives in soil and water.
- C. Requires extensive use of non-renewable resources.

References:

1.EU Commission - Building and construction - link

2.Wikipedia - History of passive solar building design - link

3.Scientific Article - Earth construction: Lessons from the past for future eco-efficient construction - link

Co-funded by the European Union

InterGenic Project

SUPPORTING EU'S TWIN TRANSITIONS THROUGH INTERGENERATIONAL LEARNING, EXCHANGES OF KNOWLEDGE, AND JOINT ACTIONS

project number: 2023-1-ES01-KA220-ADU-000155225

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.

intergenic.eu

@intergenicproject

InterGenic EU Project

Co-funded by
the European Union

Module 2

2.6 Transport

intergenic.eu
@intergenicproject
InterGenic EU Project

2.6.1 Traditional Transportation Methods and Their Sustainability

Historical modes of transport (walking, animal-powered, sailing) and their environmental footprint

Walking: The oldest form of transport, used for short distances.

Animal-powered transport: Horses, donkeys, camels, and other animals were used for transport.

Sailing: Ships powered by wind were used for long-distance travel.

In the past, people mainly walked or used animals to get around. For traveling across the sea, they used sailboats. All of these methods were much better for the environment compared to cars and planes today.

2.6.1 Traditional Transportation Methods and Their Sustainability

Walking

Description: The simplest way to get around, used by people for thousands of years.

Environmental Impact:
Positive: Walking has very little effect on the environment. It doesn’t need fuel and doesn’t produce harmful emissions.
Negative: Creating paths and sidewalks can use up land and harm natural areas, especially in busy city places.

2.6.1 Traditional Transportation Methods and Their Sustainability

Animal-Powered Transport

Types: Includes horses, oxen, donkeys, camels, and other domesticated animals used for riding or pulling vehicles.

Environmental Footprint Effects:

Positive:

Generally low carbon footprint compared to mechanized transport. Animals can utilize resources (like grass) that humans cannot.

Negative

Land degradation from grazing can lead to desertification.

Overworking animals can lead to health issues and affect biodiversity if wild species are displaced.

2.6.1 Traditional Transportation Methods and Their Sustainability

Sailing (Wind-Powered)

Types: This includes different kinds of boats and ships, from simple canoes to big sailing ships.

Environmental Impact:

- **Positive**: Sailing produces very few emissions because it uses wind for power, making it better for the environment than many modern transport options.

- **Negative**:
  - Building ships can lead to cutting down trees and taking resources from nature.
  - Some larger sailing ships have used coal or other fuels for extra power in the past.
  - More boats on the water can lead to overfishing and harm to ocean ecosystems.

2.6.2 Evolution of Transport Systems

Industrialization- Machines Changed Transport

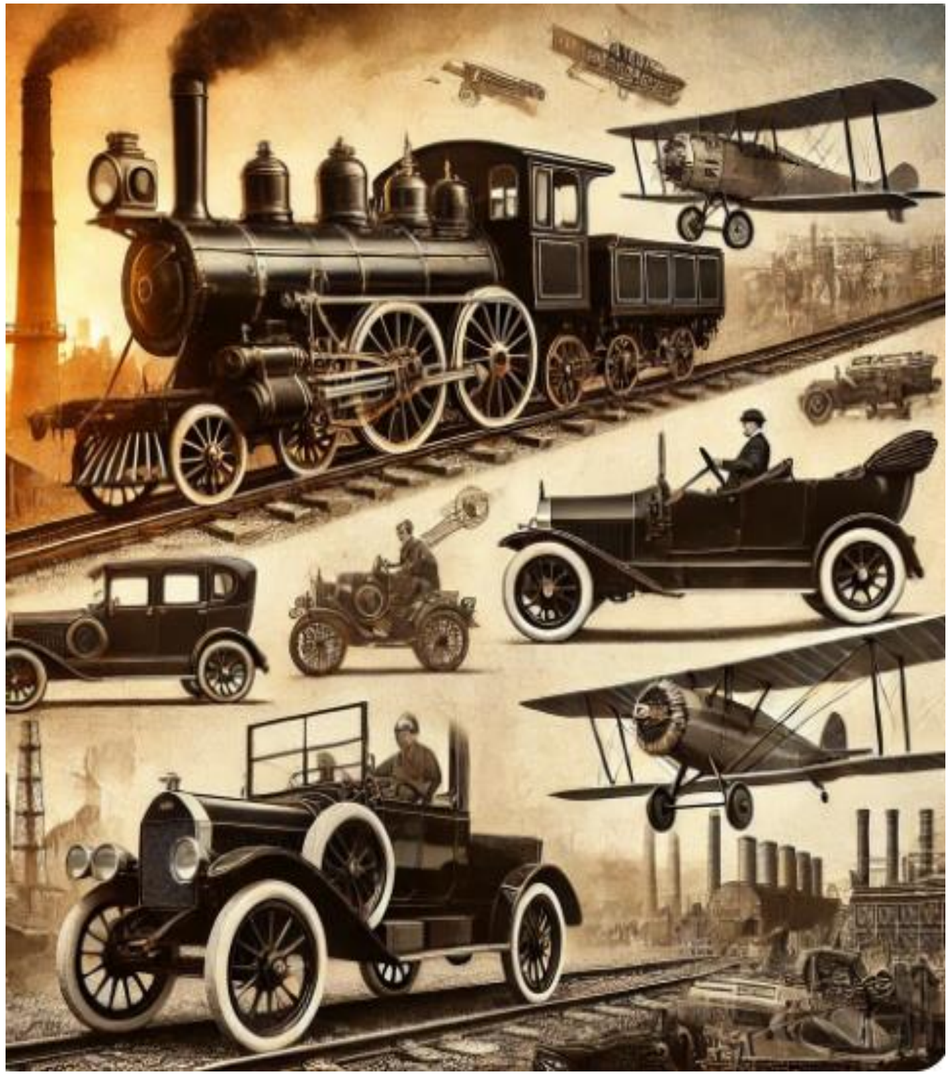
In the 18th and 19th centuries, **steam engines** changed how people traveled.

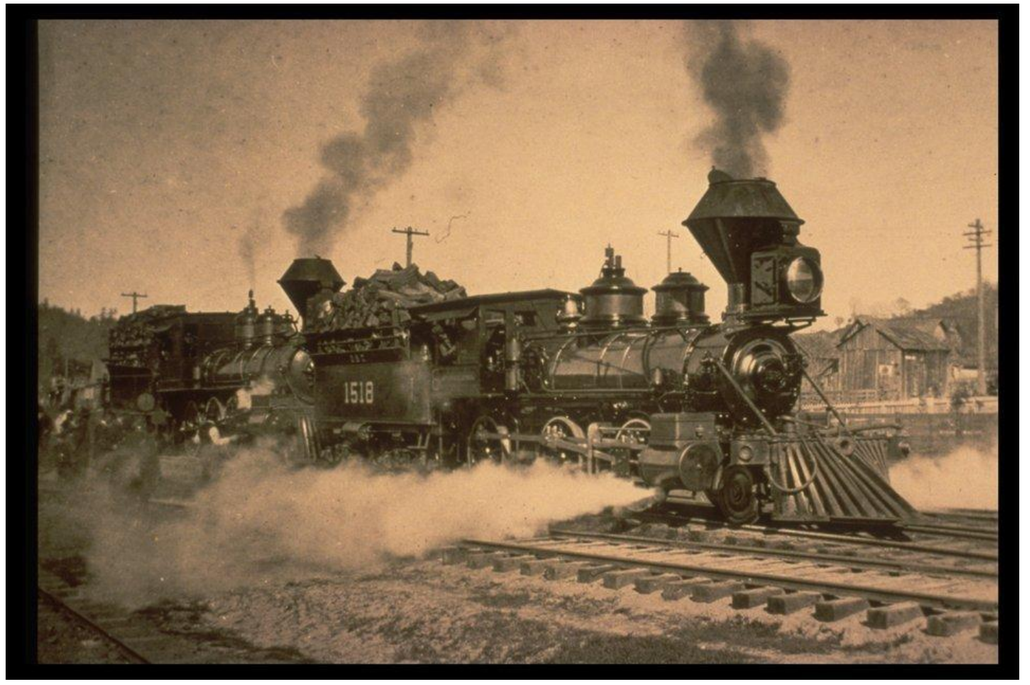
Trains, run by steam, made it quicker and easier to move people and things. Railways grew fast, connecting cities and helping businesses grow during the Industrial Revolution.

2.6.2 Evolution of Transport Systems

The rise of motorized transport and its ecological impact

By the 20th century, cars, buses, and airplanes were common. They were faster and more convenient, but they started using oil and gas, which led to pollution. These vehicles made it easier to travel in cities and over long distances.




1518

2.6.3 Modern Challenges in Transport

Carbon Emissions and Climate Change

Transport is one of the biggest sources of carbon emissions, which impact the climate.
These emissions contribute to climate change, making the Earth warmer.

2.6.3 Modern Challenges in Transport

Carbon Emissions and Climate Change

Solutions for a Cleaner Future

- New ideas for sustainable transport can help reduce pollution.
- Using cleaner vehicles is important for a healthier planet.
- Electric cars, buses, and bikes can help protect the environment.

2.6.3 Modern Challenges in Transport

Traffic congestion

What is Traffic Congestion?

- Traffic congestion happens when too many cars are on the road, causing slow movement and jams.

Global Issue:

- Cities around the world face this problem.

Effects:

- **Wastes Time:** People spend a lot of time stuck in traffic.
- **Increases Air Pollution:** More cars idling lead to more dirty air.

2.6.3 Modern Challenges in Transport

Reliance on fossil fuels

What is it?
Most vehicles today still run on oil and gas.

Limited Resources:
Oil and gas are not unlimited; they can run out.

Environmental Impact:
Burning fossil fuels contributes to global warming and climate change

2.6.3 Modern Challenges in Transport

Most of our energy today (80%) still comes from oil and gas, which pollutes the air. Only 15% comes from clean, renewable sources, like the sun and wind. 4% is coming from nuclear energy. We need to increase the use of renewable energy to help protect the planet

2.6.3 Modern Challenges in Transport

Pollution

Air Pollution:
- Vehicles release harmful gases and particles into the air.
- Contributes to respiratory issues and other health problems.

Noise Pollution:
- Traffic creates loud sounds that disturb people and wildlife.
- Can lead to stress and sleep problems for those living near busy roads.

Impact on Health and Environment:
- Affects human health by increasing the risk of diseases.
- Harms the environment by contributing to climate change and ecosystem damage

2.6.4 EU Policies on Sustainable Transport

Green Deal objectives

Goal:

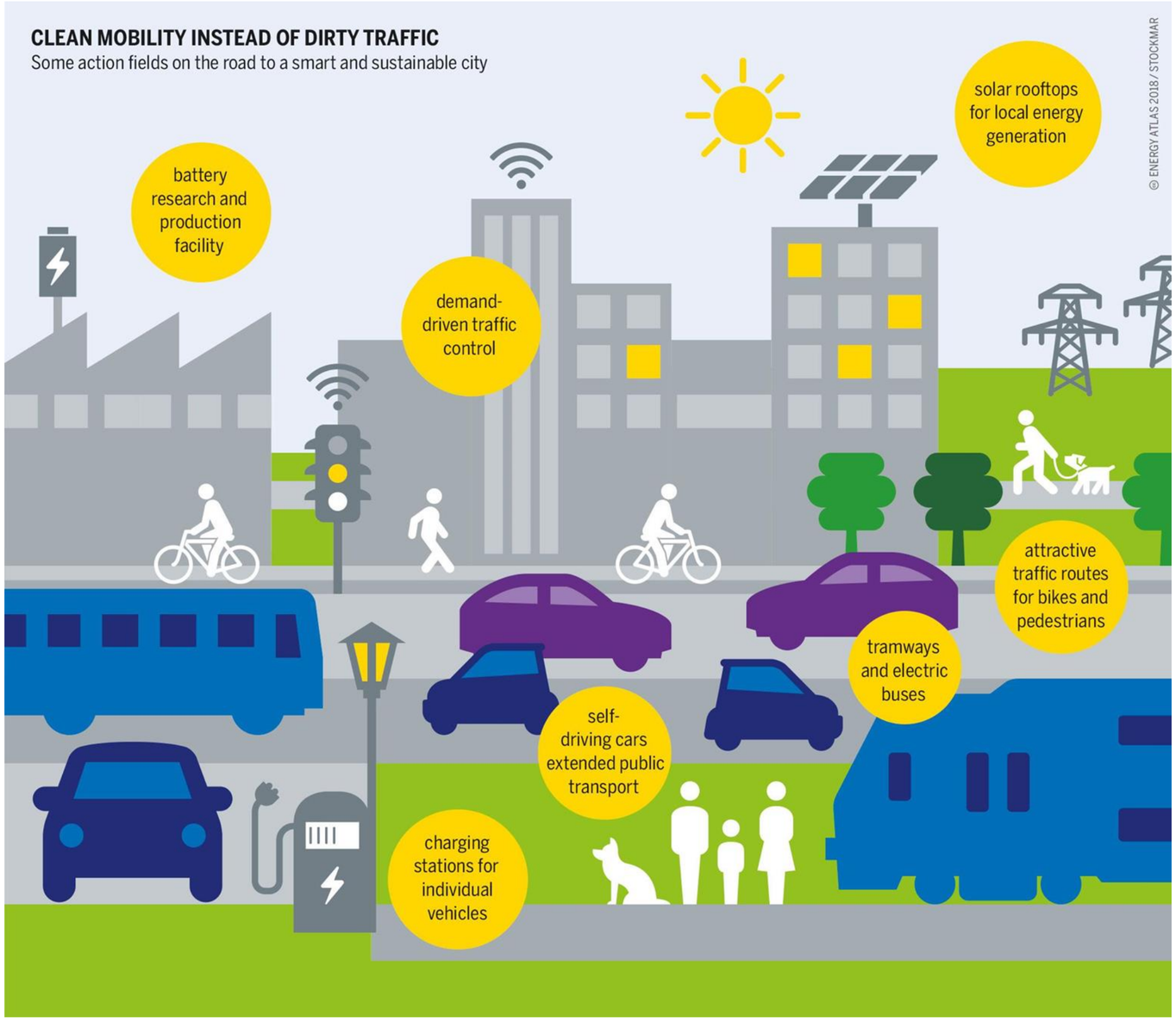
- The European Union (EU) aims to make transport greener and more sustainable by **2050**.

Key Focus Areas:

- **Cutting Carbon Emissions:**
  Reduce harmful greenhouse gas emissions from transport.

Vision for the Future:

- Promote clean and efficient transportation options.
- Support innovations for sustainable mobility.


CLEAN MOBILITY INSTEAD OF DIRTY TRAFFIC
Some action fields on the road to a smart and sustainable city
© ENERGY ATLAS 2018 / STOCKMAR
battery research and production facility
demand-driven traffic control
solar rooftops for local energy generation
attractive traffic routes for bikes and pedestrians
tramways and electric buses
self-driving cars extended public transport
charging stations for individual vehicles

2.6.4 EU Policies on Sustainable Transport

Promotion of electric vehicles

Promotion by the EU:
- The European Union encourages the use of electric cars (EVs).

Environmental Benefits:
- **No Emissions While Driving:**
  - EVs do not produce harmful emissions, helping to improve air quality.

Goals for the Future:
- Support the transition to cleaner transportation.
- Reduce overall carbon footprint and combat climate change.

2.6.4 EU Policies on Sustainable Transport

Public transport infrastructure

Importance of Clean Public Transport:
Investments are made in clean options like buses, trams, and trains.

Benefits:

Reduces Cars on the Road:
Encourages more people to use public transport instead of personal vehicles.

Environmental Impact:
Decreases traffic congestion and lowers emissions.
Improves air quality in urban areas.

2.6.4 EU Policies on Sustainable Transport

Cycling as a Key Sustainable Transport Mode

Cycling is one of the most popular non-polluting ways to travel in Europe. In October 2023, EU countries signed an agreement in Spain to invest €60 billion over the next few years to build better bike lanes and cycling infrastructure.This investment will help more people choose bikes for short trips instead of cars, reducing traffic and pollution.

Why Cycling is Good for the Environment:
Biking doesn’t create pollution, helps reduce traffic jams, and is good for your health.

EU’s Promise:
This investment supports the EU’s plan to cut carbon emissions and make transport cleaner and greener.

2.6.4 EU Policies on Sustainable Transport

Emission reduction goals

EU Objectives:
The European Union aims to reduce emissions from transport.

Key Strategies:

Promoting Cleaner Fuels:
Encourage the use of alternative fuels like biofuels and hydrogen.

Supporting New Technologies:
Invest in innovative technologies for cleaner transportation solutions.

Impact:
Aims to lower overall greenhouse gas emissions and combat climate change

2.6.5 Old sustainable transport practices and their Socioeconomic Implications

Netherlands: Bicycle culture - many people use bikes for daily transportation.

Romania: Horse-drawn carts in rural areas.

Italy: Gondolas in Venice as a traditional form of water transport.

Finland: Reindeer sledges in northern Finland, used in harsh winter climates.

Greece: Donkey transport on islands with narrow streets.

Portugal: Old railway systems used for transporting goods from rural areas.

In many European countries, old forms of transport are still used today because they are good for the environment. For example, in the Netherlands, many people ride bikes, and in rural Romania, people still use horse-drawn carts. These methods are eco-friendly and help communities stay connected.

Activity 2.6

Activity 2.6: Group Discussion and Reflection (10 minutes)

Instructions:

Discuss: How can we combine old and new transport methods to create a sustainable future?

Group reflection: Which traditional transport method is still relevant today, and why?

Let’s talk about how old and new ways of moving can work together. Which traditional method do you think we should still use, and why?

QUIZ

Transport Quiz

Question 1:What are some traditional modes of transportation that were used in the past?
a) Walking, animal-powered, and sailing
b) Cars, trains, and airplanes
c) Bicycles, electric cars, and buses
Answer: a) Walking, animal-powered, and sailing

Question 2:How did the invention of the steam engine change transportation
a) It slowed down transport
b) It made travel faster and more efficient
c) It was only used for water travel
Answer: b) It made travel faster and more efficient

QUIZ

Question 3:Which of the following is a major environmental problem caused by modern transport systems?
a) Carbon emissions
b) Lack of fuel
c) Overuse of bicycles
Answer: a) Carbon emissions

Question 4:What is one goal of the European Union’s Green Deal in transport?
a)Build more highways
b)Promote electric vehiclesc) Increase air travel
c)Increase air travel
Answer: b) Promote electric vehicles

REFERENCES

Sustainable Transportation Overview For more insights into sustainable transportation practices:
Sustainable Transportation - United Nations

EU Green Deal and Transportation: Learn more about the European Union's initiatives for green transportation:
European Green Deal – Transport

Electric Vehicles and Future Transport: For an in-depth look at global electric vehicle trends and innovations, read the International Energy Agency's (IEA) report on EVs: Global EV Outlook - International Energy Agency

Environmental Impact of Transport: Understand the environmental footprint of modern transport:
Environmental Impact of Transportation

The European Declaration on Cycling was adopted in October 2023 by EU member states during the Urban Mobility Days in Seville, Spain. You can find more details about this declaration (EU Urban Mobility Observatory)

Co-funded by the European Union

InterGenic Project

SUPPORTING EU'S TWIN TRANSITIONS THROUGH INTERGENERATIONAL LEARNING, EXCHANGES OF KNOWLEDGE, AND JOINT ACTIONS

project number: 2023-1-ES01-KA220-ADU-000155225

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.

intergenic.eu

@intergenicproject

InterGenic EU Project

Co-funded by
the European Union

Module 2

2.7 Sustainability and circular entrepreneurship

intergenic.eu
@intergenicproject
InterGenic EU Project

Sustainability

In 1987, the Brundtland Commission of the United Nations defined SUSTAINABLE DEVELOPMENT as that which meets the needs of the present without compromising future generations.

(1125) BIC : 2 minutos para entender el desarrollo sostenible - Spanish – YouTube
https://www.youtube.com/watch?v=I4wj61hScUQ

The Sustainable Development Goals

The (European) Circular Economy Action Plan will contribute to the achievement of the Sustainable Development Plan that seeks to guarantee sustainable consumption and production patterns"

The Circular economy, a great ally of the SDGs Goal No. 12 - Circular Spain 2030 (2018)

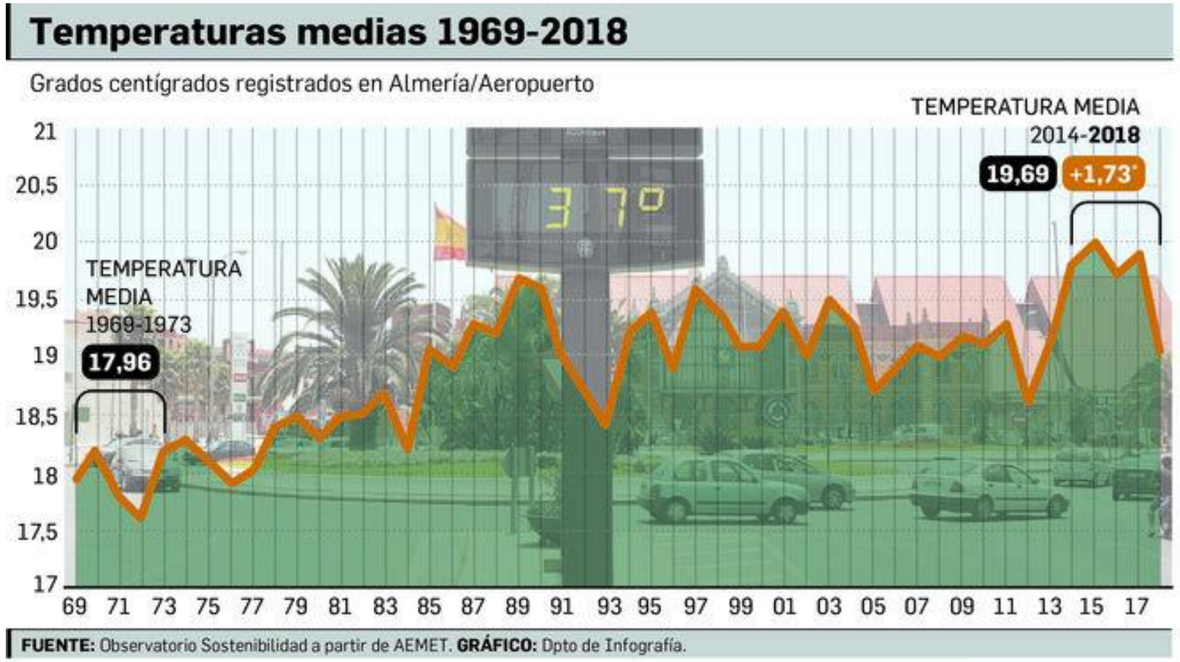
Current state

- Climate change.
- Population increase.
- Increased demand.
- Scarcity of resources.

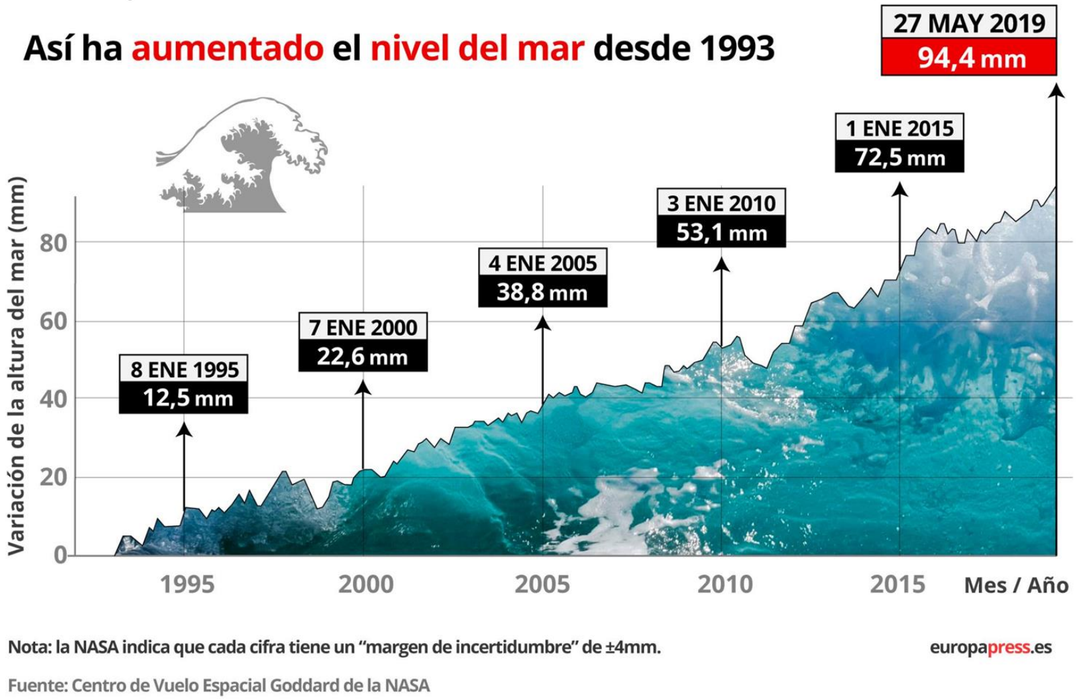
Foto de Markus Spiske: https://www.pexels.com/es-es/foto/clima-carretera-paisaje-gente-2990650/

Current state: Climate change

Average temperatures from 1969 to 2018



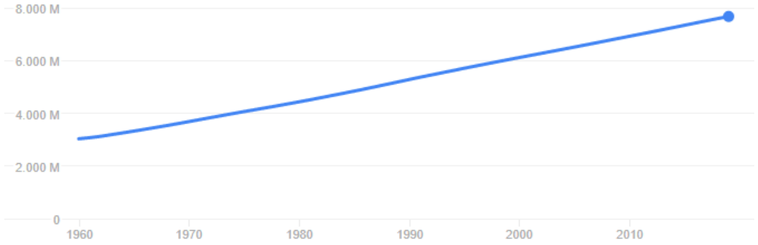
Increasing of the sea level since 1993



Current state: Population increase

Tierra / Población

7,674 miles de millones (2019)



Entre las fuentes se incluyen: Banco Mundial

Sugerencias

Population: 7,674 billions people (2019)

Growth in the number of inhabitants:
1950 - 2.500.000.000
2021 - 7.700.000.000
…….
2050 - 9.700.000.000

Population increase and its impact on water resources

According to figures extracted from the White Paper on the Economics of Water, by 2020 water consumption will increase by 50%;

- **1,800 million people will live in regions with absolute water scarcity;**
- **2/3 of the population will live in conditions of water stress;**

and 18 countries will have a higher demand for water from their resources.

. But not only that, 1 in 4 people will live in a country where the lack of fresh water will be chronic and recurrent

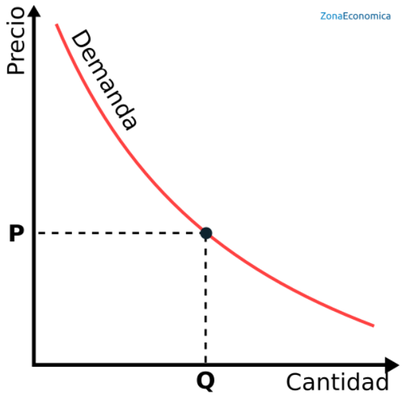
Current state: Increased demand

Natural resource extraction | Natural resource processing | Product Manufacturing | Consumption | Waste

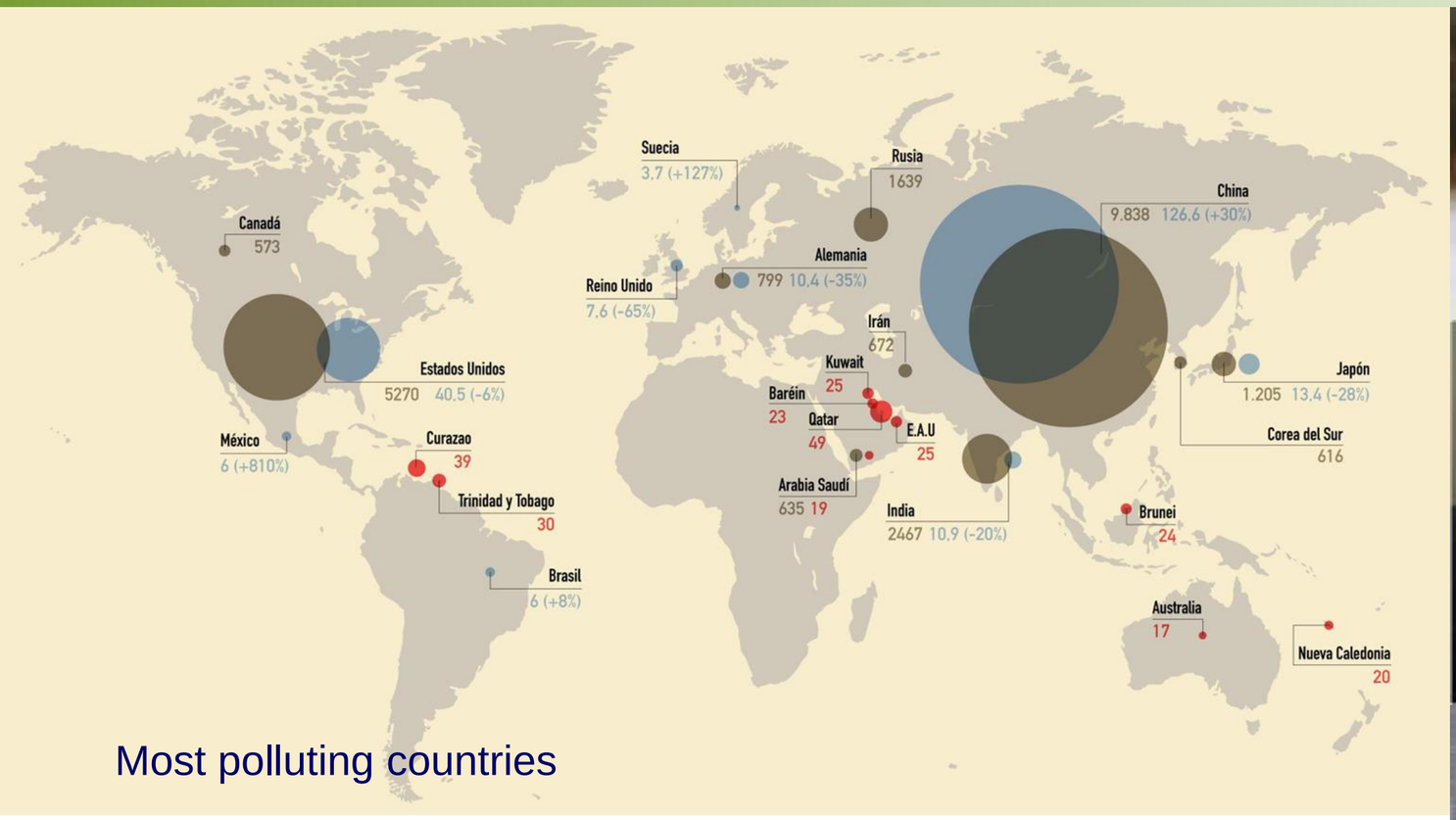
The more wealth increases, the more pollution increases.

How it affects consumption:
It affects the entire life cycle of a product and generates greater demand (therefore there is more product manufacturing). This in turn generates greater consumption of natural resources, and greater energy demand, as well as produces greater pollution in manufacturing, transport and waste.

Price-Demand Ratio



Current state: Increased demand – Increased pollution



Most polluting countries

- Increased air pollution
- Open-air landfills
- Decrease in the planet's resources (scarcity)

Current state: Scarcity of resources

Technical Definition

Scarce resources are those that, according to the economic principle of scarcity of resources or law of scarcity, are in a situation of limited availability.

Decrease in arable area

Increase in endangered species

Fossil fuel depletion

Aftermath

- **Increased pollution.**
- **Increase in the cost of raw materials.**
- **Price increases.**
- **Loss of biodiversity.**

The sooner we react, the more chances of success we will have in reversing the situation

Source. https://economipedia.com/

Disruptive change in economy

Solution: circular economy

The **linear economy** entails a cycle of consumption that generates a high amount of waste.

The **recycling economy** is more environmentally friendly as it considers the possibility of recycling.

The **circular economy** involves the recycling, repair, and reuse of products.

Without a doubt, the economic model that best responds to all current challenges is that of the circular economy.

https://www.soychangemaker.com/

Disruptive change in economy

Solution: circular economy

Circular economy: it starts with design

The design of businesses that include environmental and social criteria is today a basic aspect in the incubation and acceleration of projects, as well as for the launch of new lines of products and services that are framed in the Circular Economy, a new paradigm where the concept of waste disappears.

The best waste is the one that is not generated.

https://www.soychangemaker.com/

Disruptive change in economy

Solution: circular economy

Objectives
It aims to redefine growth, focusing on positive benefits for the whole of society. It involves gradually decoupling economic activity from the consumption of finite resources and removing waste from the system. Supported by a transition to renewable energy sources, the circular model generates economic, natural and social capital.

It is based on three principles:
Designing waste and pollution. Design using the existing product without having to extract raw material and think about the life cycle of the product. In the production cycle it is important to reduce pollution.
Keeping products and materials in use. The life cycle of a product must be long. Apply the second use to the unused product.
Regenerate natural systems. Repair, even partially, biodiversity and natural spaces.
The circular economy is part of the study of feedback from nonlinear systems, living systems.

Fuentes: Adaptado de CMM
https://www.soychangemaker.com/

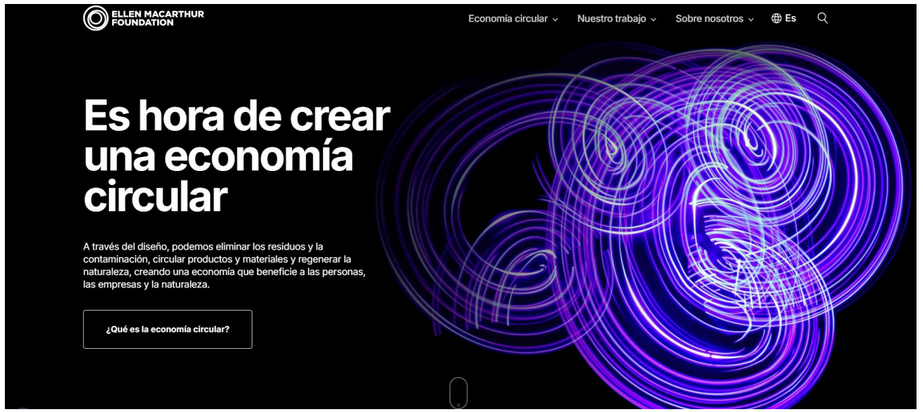
Disruptive change in economy

Solution: circular economy

There are a large number of resources on the web that can contribute to the development of knowledge and entrepreneurship in the circular economy.

In this presentation you will find our approach to the subject, but you can find more information on the website of the Ellen Mc Arthur Foundation for the circular economy: https://www.ellenmacarthurfoundation.org/es/temas/presentacion-economia-circular/vision-general

There you will find key ideas, principles, examples and articles with up-to-date information on the circular economy. In the next slide we continue with ideas on how you should approach your proposal based on the 6 types of circular economy business model.



Disruptive change in the economy: New business models

New business models

There are 6 types of business models that can be developed with the circular economy:

#1 Circular Supplies

#2 Waste as resources

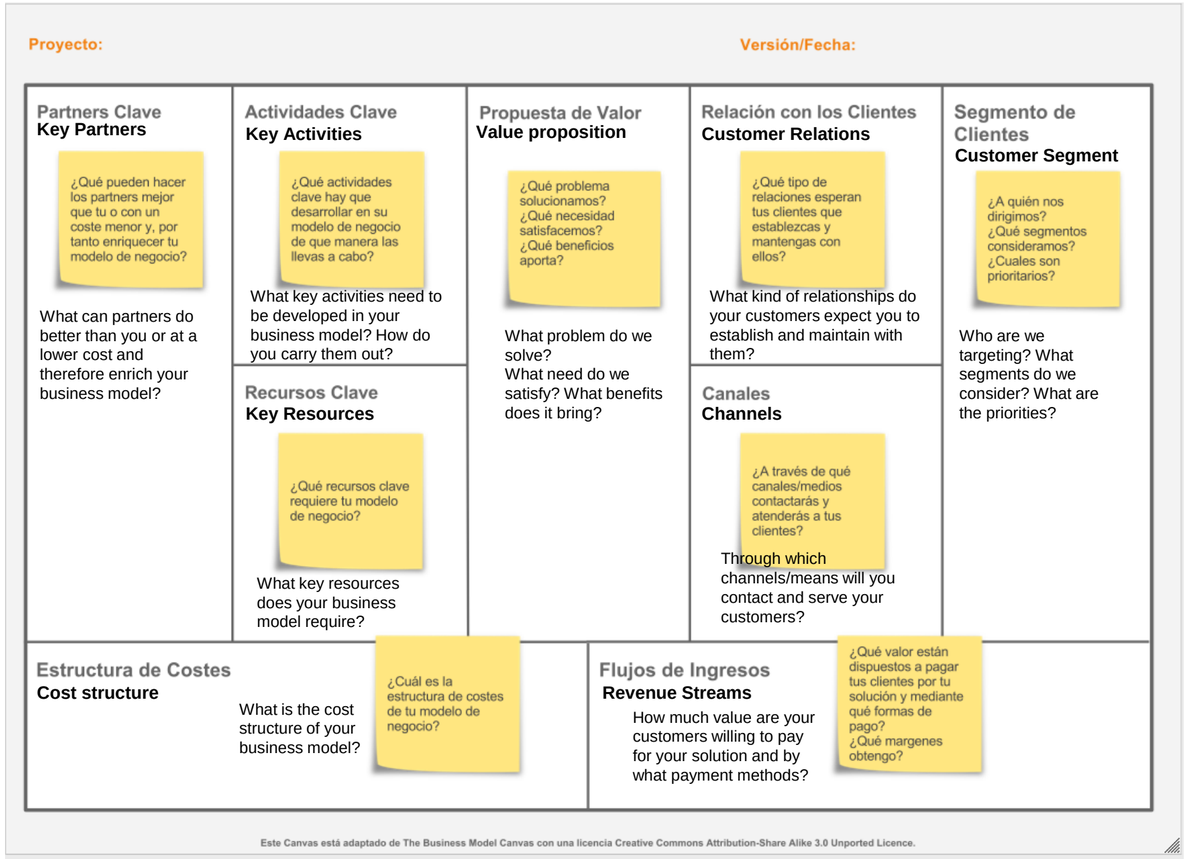
#3 Extending product life

#4 Platform sharing

#5 Product as a Service

#6 Healthy company

Circular economy criteria in the value proposition of a business or undertaking



Disruptive change in the economy: New business models

#1 Circular Supplies

Replacing the scarce original resources used in manufacturing processes.

Renewable energies, biomass, etc.

Example 1: Zero waste restaurant
Example 2: Change in personal behavior

Return packaging

Instock, the first Dutch "0 food waste" restaurant, serves a three-course menu for €20 that changes every day, making ingenious use of supermarket leftovers "rescued" that morning.

Disruptive change in the economy: New business models

#2 Waste as resources

Valorisation of resources, based on collection, treatment and recovery for new uses.

It allows the useful life of the original product to be extended, reducing the capture of new scarce resources.

Example: Loop, a pilot project in France, the United Kingdom and the United States that manufactures reusable packaging for FMCG companies, collects it at the user's home once its contents have been consumed, cleans it and refills it,

Disruptive change in the economy: New business models

#3 Extending product life

Application of processes of repair, updating, conditioning of products so that they enter a new marketing cycle.

Objective: To extend the useful life, with longer life components instead of applying "use and throw away".

If we replace for twenty years the PURCHASE of five 2,000-cycle washing machines with the RENTAL of one of 10,000, ……
we would save 180 kg of steel and 2.5 tons of carbon dioxide.

What if we reuse clothes.....
95% of the textile that is discarded is recyclable.

Disruptive change in the economy: New business models

#4 Platform sharing

This type of circular business models allows the use of a product to be increased, connecting different agents in the community.

"Sharing Economy".

With social media and apps, it's possible to connect people with similar interests who share the product.

Pago por uso

Software as a Service - SaaS

Disruptive change in the economy: New business models

#5 Product as a Service

It changes the paradigm of product ownership and turns it into use. Enjoy and not have.
You pay only to use it and hire all the services.

Pay-as-you-go

Such is the commitment to durability that the lighting fixtures have **75% longer lifespan than conventional devices.**

The airport pays up to 50% less light when comparing the performance of conventional fixtures versus LED technology.

https://www.holland.com/es/

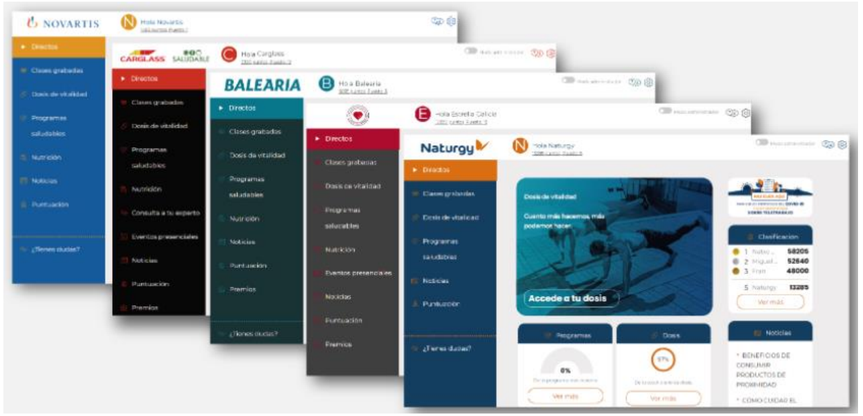
PHILIPS Lighting

Disruptive change in the economy: New business models

#6 Healthy company

It is concerned with actively improving the health of its workers, making both the work environment and the habits of its employees healthy inside and outside the work environment, providing:

- Physical health.
- Emotional health.
- Nutritional health.
- Environmental health.



Circular entrepreneurship

1. Principles

2. Levels of the circular economy: Where to locate the entrepreneurship

3. Create value

4. How to Measure Value: 3P (Profit-People-Planet) Triple Counting

5. Strategies for the circular economy

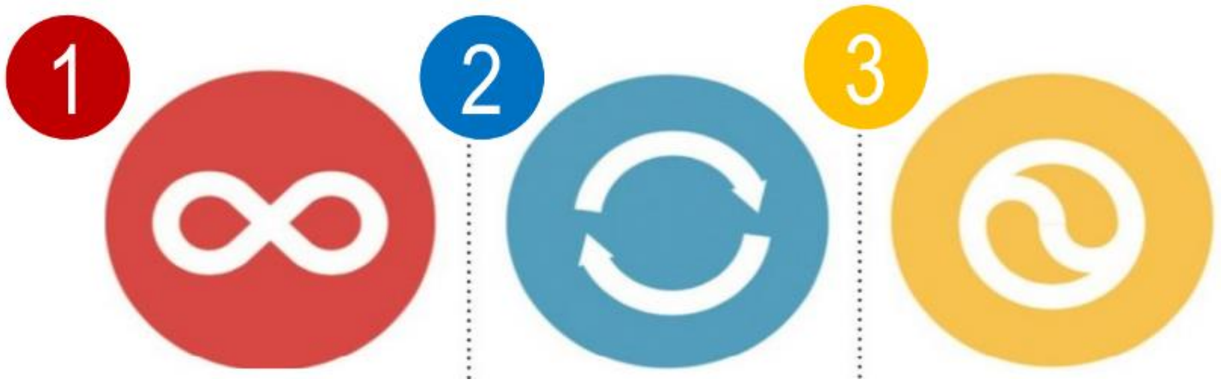
6. Roadmap for advanced projects or SMEs

Foto de Akil Mazumder: https://www.pexels.com/es-es/foto/persona-sosteniendo-una-planta-verde-1072824/

Circular entrepreneurship

1. Principles

The 3 Principles of the Circular Economy



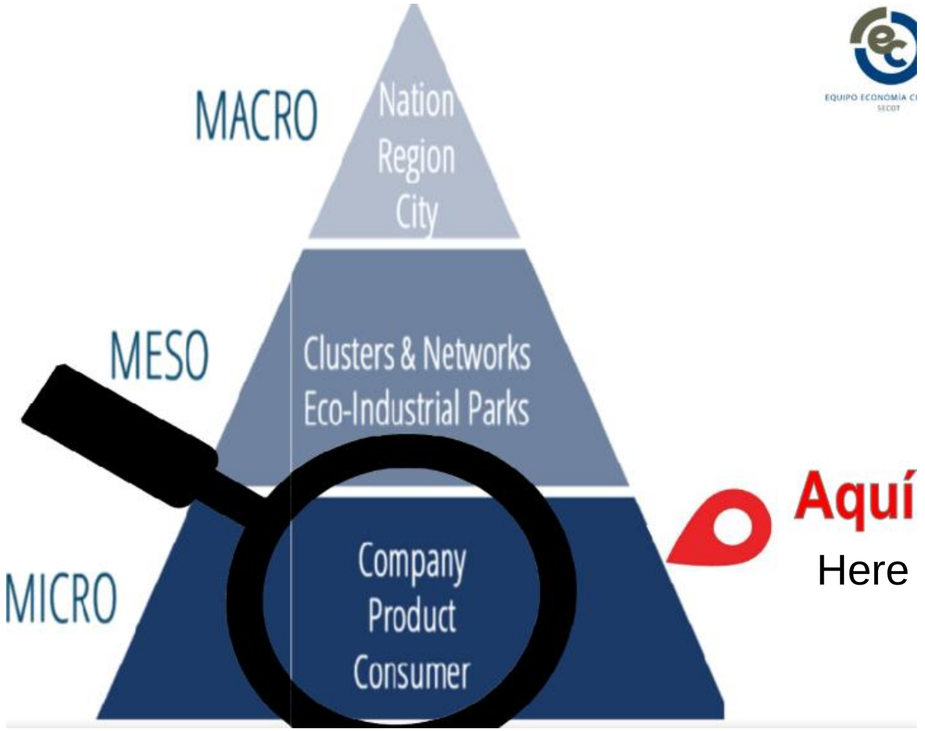
Residue-free design

Keeping products in use

Regenerating natural systems

Circular entrepreneurship

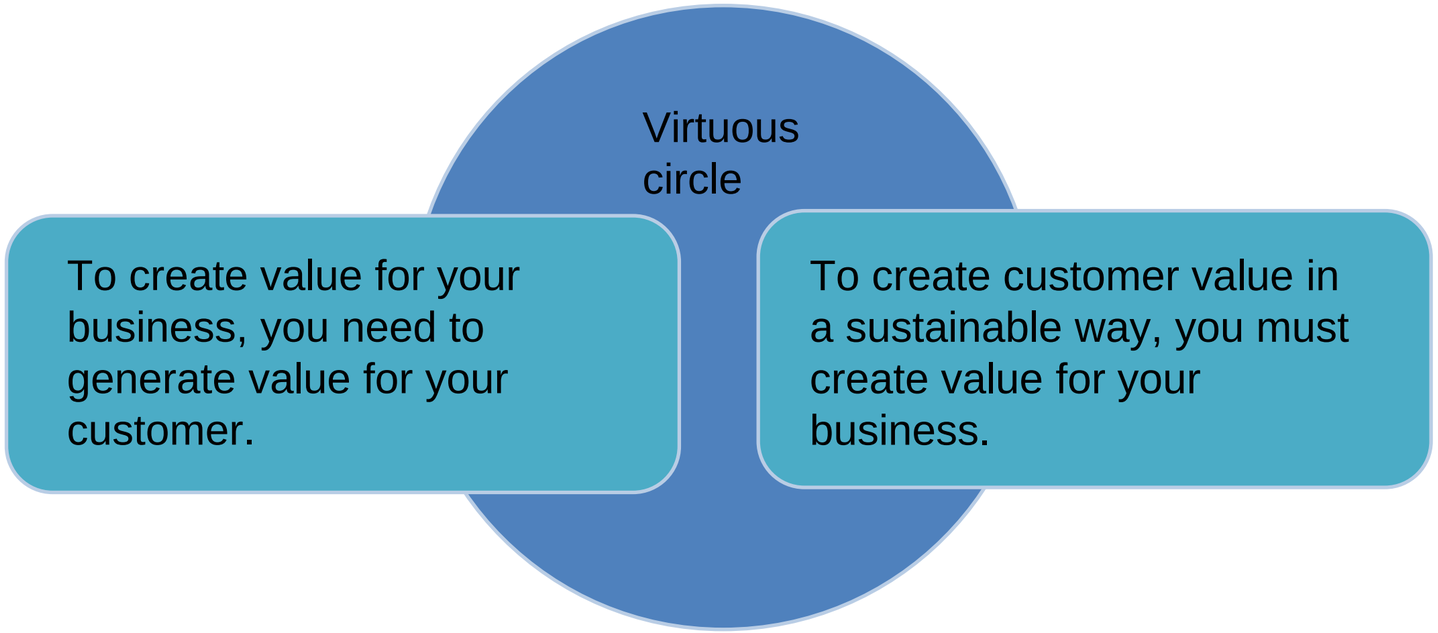
2. Where to position the project



Circular entrepreneurship

3. Create value

The first step to entrepreneurship is to create value



"It's meeting needs in exchange for profit that generates wealth." M. Porter

Circular entrepreneurship

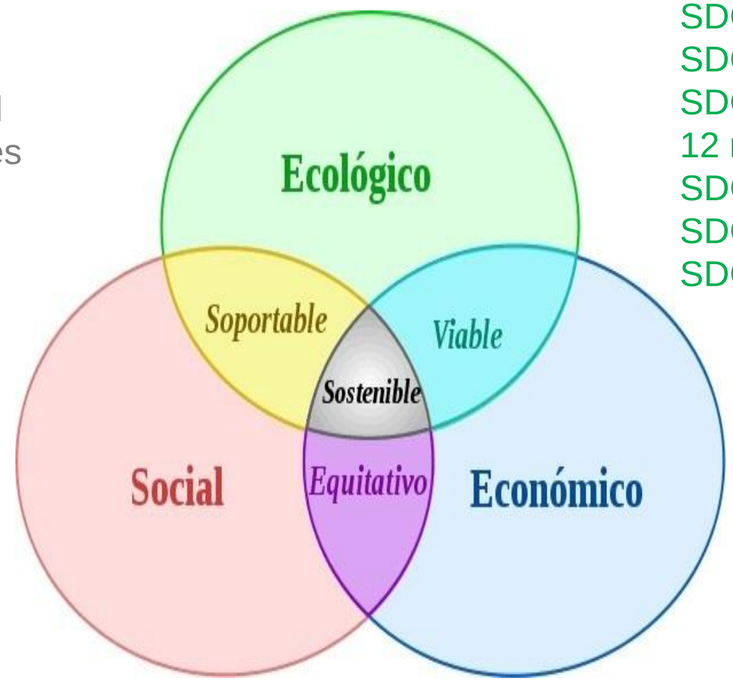
4. How to Measure Value

Triple accounting that measures impact: on the planet, on profits and on people.

Companies must simultaneously take into account the three factors to achieve SUSTAINABILITY

SDGs and SUSTAINABILITY Plan

The SDGs are framed in each of the sectors, and The intersection between them is what determines whether the enterprise is sustainable.



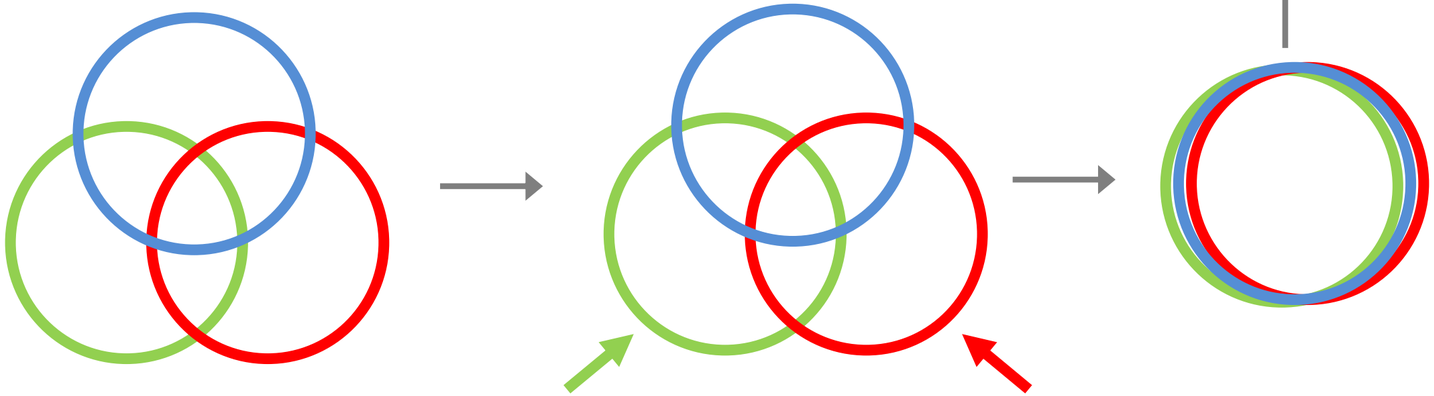
SDG 6 Clean water and sanitation
SDG 7 Affordable and clean energy
SDG 9 Industry, innovation and infrastructure
SDG 11 Sustainable cities and communities SDG 12 responsible consumption and production
SDG 13 Climate action
SDG 14 Life Below Water
SDG 15 Life on Land

SDG 3 Good health and well-being
SDG 4 Quality education
SDG 5 gender equality
SDG 10 Reduced inequalities
SDG 16 Peace, justice and strong institutions
SDG 17 Partnerships to achieve the goals

SDG 1 No poverty
SDG 2: Zero hunger
SDG 8 Decent work and economic growth

Circular entrepreneurship

4. How to measure value



Social forces

Awareness and concern.
New values and needs.
Innovation and technology.

Triple impact entrepreneurship (social, environmental and economic).

Environmental Forces

Scarcity/prices of resources.
Eco-taxes of emissions/ Waste.
Inefficiencies.

Economic forces

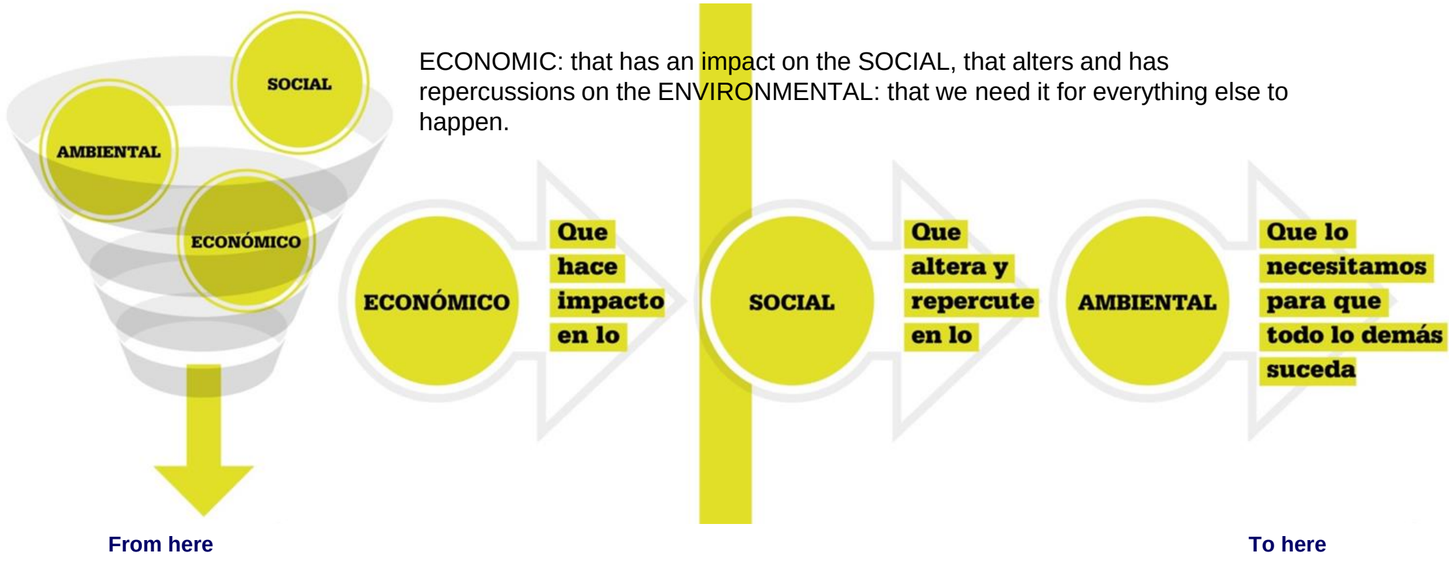
Regulation.
Reputation.
New markets and models.

Circular entrepreneurship

4. How to Measure Value

Triple economy - Triple impact - Triple balance:

- Social.
- Economic.
- Environmental.



ECONOMIC: that has an impact on the SOCIAL, that alters and has repercussions on the ENVIRONMENTAL: that we need it for everything else to happen.

Necessary evolution of the model to be sustainable

Circular economy

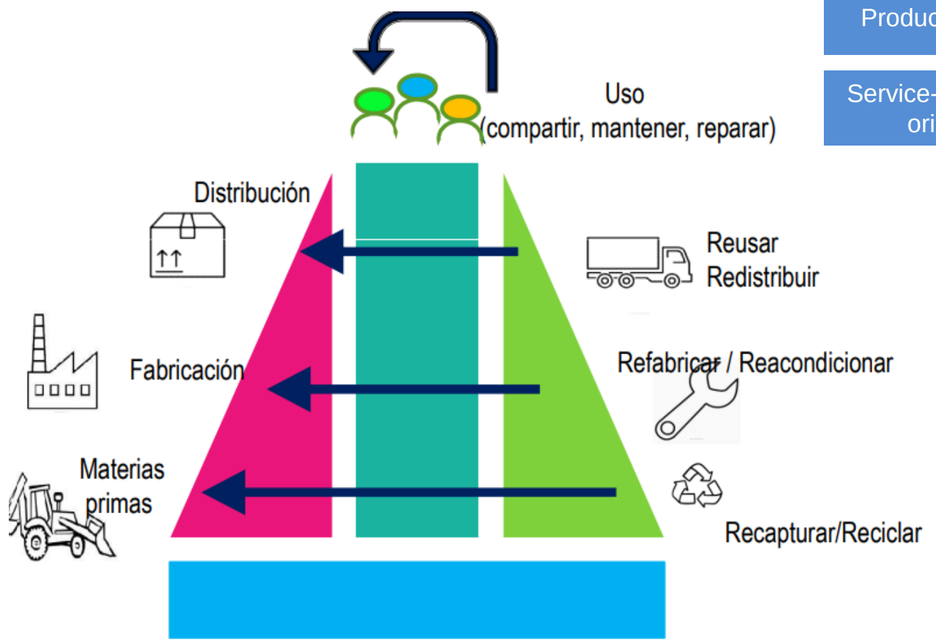
5. Strategies

Long-life design

Circular design

Process efficiency

Circular resources



Life Extension Services

Product as a Service

Service-oriented/result-oriented use

Reuse/ Redistribute

Remanufacture

Recapture/Recycle

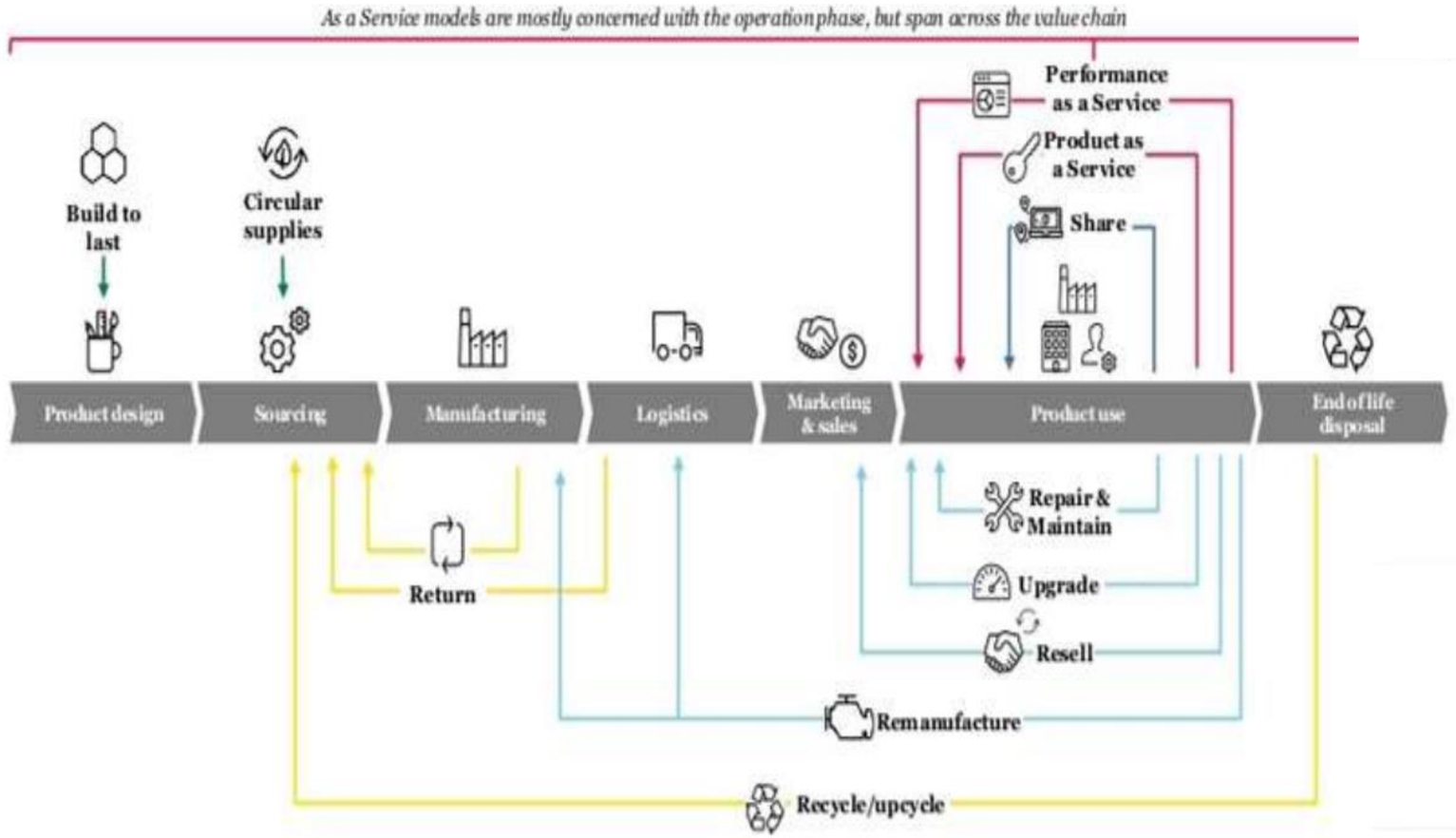
Circular economy

5. Strategies

1. Circular Sourcing	Replace finite resources with renewable, bio-based, or recycled resources in the production process.
2. Sustainable design	Design products in a way that they can be effectively disassembled, reused, repaired, and recycled.
3. Resource efficiency	Optimize the use of raw materials/resources – minimize waste – in the production process.
4. Product as a Service	Provide a service in areas that were traditionally sold as products; Increases product lifecycle through reuse at the end of use.
5. Share/Virtualize	Share durable assets such as cars, rooms, appliances, and digitize products to increase their lifespan (e.g., books, music, shopping, etc.)
6. Usage/maintenance optimization	Increase the performance/efficiency of a product and prolong life through maintenance.
7. Reuse/Redistribution	Buying and selling second-hand and previously owned products to increase the product lifecycle.
8. Refurbishment/Manufacturing	Rebuilding products or components for a new use, rather than recycling them Industrial symbiosis.
9. Manufacturing Recycling	Waste or by-products of manufacturing become inputs for another product.
10. Consumer recycling	Recycle discarded materials after the end of consumption.

Circular economy

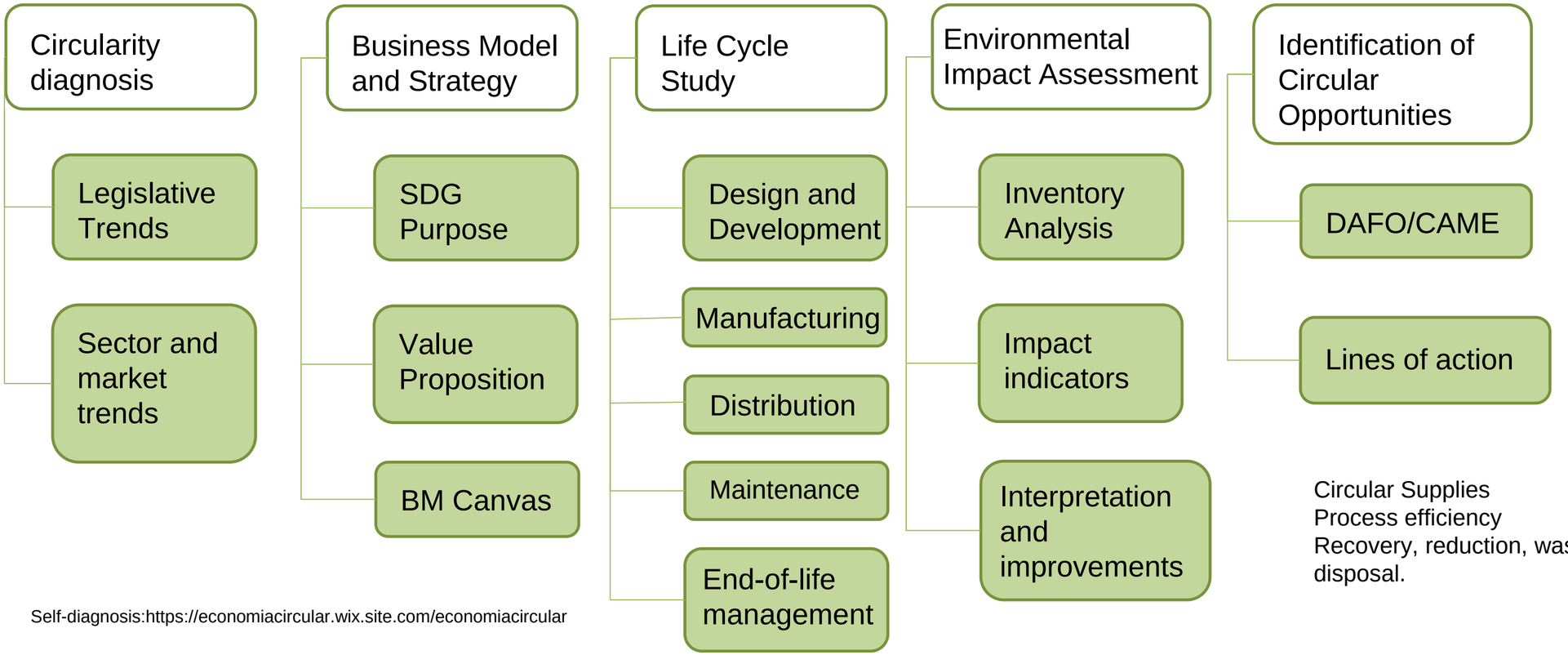
5. Strategies



Fuente: Accenture, Sitra

Circular economy

6. Route for advanced projects or SMEs



Self-diagnosis:https://economiacircular.wix.site.com/economiacircular

Circular Supplies
Process efficiency
Recovery, reduction, waste disposal.

Circular economy: Potential incentives in Europe

EU - Directive on reducing the impact of certain plastic products on the environment. (2019 Development – 3 July 2021 Implementation).

- The manufacture and sale of single-use plastics is prohibited.
- Countries will have to recover 90% of plastic bottles by 2029.
- By 2025, 25% of the plastic in bottles will have to be recycled; by 2030, this rate will rise to 30%.
- The polluter pays. Producers of tobacco or fishing gear will have to pay the cost of collecting part of the waste generated by their products.
- Manufacturers will be obliged to warn of the ecological impact of cigarettes with plastic filters, plastic cups, wet wipes and sanitary napkins.

- On average, each European generates almost 180 kg of plastic packaging waste per year. If we do not take action, waste will increase instead of decreasing, therefore:
- **Unnecessary packaging will be restricted and reusable and refillable packaging will be encouraged.**
- **It is going to be mandatory for packaging to be all recyclable**

EU - European Green Deal Directive: end packaging waste (30 November 2022)

Circular economy: Potential incentives in Europe

Potential incentives in Europe

EU - Environmental, Social and Governance (ESG) Ratings: Agreement of the Council and the European Parliament.

The Council and the European Parliament reached a provisional agreement in February 2024 on a Proposal for a Regulation on environmental, social and governance (ESG) rating activities, which aims to strengthen investor confidence in sustainable products. **ESG ratings are used to issue an opinion on the sustainability profile of a company or financial instrument, assessing its exposure to sustainability-related risks and their effects on society and the environment.**

ESG ratings have an increasing impact on the functioning of capital markets and investor confidence in sustainable products.

The agreement considers the possibility of offering **separate A, S and G ratings.** Or, if a single rating is offered, the weighting of factors A, S and G must be made explicit.

ESG rating providers established in the EU will need to obtain authorisation from the European Securities and Markets Authority (ESMA).

Esta información que puede servir para tu emprendimiento sostenible ha sido extraída de: https://www.consilium.europa.eu/es/press/press-releases/2024/02/05/environmental-social-and-governance-esg-ratings-council-and-parliament-reach-agreement/ en donde encontrarás la información ampliada directamente provista por la Comisión Europea.

Circular economy: Potential incentives in Europe

Potencial incentives in Europe

EU - EU Corporate Sustainability Reporting and Corporate Sustainability Directives

The EU requires large companies and listed companies (except micro-enterprises) to report the social and environmental impact of their activities. This regulation, part of the European Green Deal, allows investors and other stakeholders to evaluate sustainability performance.

Corporate Sustainability Directive (CSRD)
In force since January 2023, the CSRD expands the scope of reporting companies and harmonizes reporting requirements across the EU, integrating the European Sustainability Reporting Standards (ESRS). From 2024, affected companies must follow these rules, facilitating comparisons and promoting transparency on environmental and social impact.

Esta información que puede servir para tu emprendimiento sostenible ha sido extraída de: https://finance.ec.europa.eu/capital-markets-union-and-financial-markets/company-reporting-and-auditing/company-reporting/corporate-sustainability-reporting en donde encontrarás la información ampliada directamente provista por la Comisión Europea.

Circular economy: Possible incentive elements in Spain

The Spanish Circular Economy Strategy sets the following objectives to be achieved by 2030:

- Reduce national consumption of materials by 30% in relation to GDP, taking 2010 as the reference year.
- Reduce waste generation by 15% compared to what was generated in 2010.
- Draft Law on the Prevention of Food Losses and Waste-BOC 17 JUNE 2022: seeks to eliminate food waste generation throughout the food chain: 50% per capita reduction at the household and retail consumption level and 20% in production and supply chains from 2020, thus contributing to the Sustainable Development Goals (SDGs).
- Increase reuse and preparation for reuse to 10% of the municipal waste generated.
- Improve water use efficiency by 10%.
- Reduce greenhouse gas emissions to below 10 million tonnes of CO_2 equivalent.
- Law 7/2022, Generalitat Valenciana, 29 November, on WASTE AND CONTAMINATED SOILS for the PROMOTION of the CIRCULAR ECONOMY. CLOTHING becomes WASTE.

Circular economy: Sustainability plan

The **Sustainability Plan** is the roadmap that determines an organization's strategy in terms of sustainability, and its purpose is to define the short, medium and long-term objectives, and the actions to be implemented, articulated around the main axes (social, economic and environmental).

1. Define strategic objectives and their Action Plan.
2. Define key indicators
3. Identify those responsible
4. Plan Calendar
5. Control and monitoring
6. Reporting and communication (sustainability report or report)

- The sustainability report is the main tool that an organization or company has to voluntarily communicate its performance and impact, whether positive or negative, on environmental, social, economic and corporate governance matters: Non-financial information (Law 11/2018) for large companies.

- Others: CSR, ESG, GRI, Stocktaking of the Common Good, SDG Action Plan to align with the 2030 Agenda, UN Global Compact

Resources

(1125) BIC : 2 minutos para entender el desarrollo sostenible - Spanish – YouTube
https://www.youtube.com/watch?v=I4wj61hScUQ

https://www.eca.europa.eu/en/sustainable-development-goals

Observatorio de Sostenibilidad AEMET

https://adaptecca.es/riesgos-climaticos-15oc-vs-2oc-temperatura-global

https://www.koopera.org/

https://www.soychangemaker.com/

https://www.pwc.com/ia/es/publicaciones/energy-circularity.html

chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.accenture.com/content/dam/accenture/final/accenture-com/document/Accenture-Economia-Circular-Informe-Espana.pdf

https://www.ellenmacarthurfoundation.org/es/temas/presentacion-economia-circular/vision-general

https://www.consilium.europa.eu/es/press/press-releases/2024/02/05/environmental-social-and-governance-esg-ratings-council-and-parliament-reach-agreement/

https://finance.ec.europa.eu/capital-markets-union-and-financial-markets/company-reporting-and-auditing/company-reporting/corporate-sustainability-reporting

QUIZ

1. What does Sustainability mean when we talk about entrepreneurship? (Answer: Slide 2)
2. What are the 4 elements that define the current situation of the planet? (Answer: Slide 4)
3. Describe the circuit of a product in the linear, recycling and circular economy (Answer: Slide 10)
4. Mention the 6 types of circular economy business models (Answer: Slide 14)
5. Comment on some strategies to take into account in terms of the life of products in the circular economy. (Answer: Slide 28- 29)
6. Describe a possible route for sustainable entrepreneurship projects (Answer: Slide 31)

These materials have been provided by:

Delegation SECOT Castelló
Espaitec I – Parque Tecnológico de la UJI
Tel: 964387561 – secotcs@secot.org
www.secot.org
https://castellon.secot.org

Co-funded by the European Union

InterGenic Project

SUPPORTING EU'S TWIN TRANSITIONS THROUGH INTERGENERATIONAL LEARNING, EXCHANGES OF KNOWLEDGE, AND JOINT ACTIONS

Project Number: 2023-1-ES01-KA220-ADU-000155225

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.

intergenic.eu

@intergenicproject

InterGenic EU Project