

Transcript of the Video Roser Maneja

Global change can be defined in a simple way as the set of socio-ecological alterations that take place in the Earth system. This set of alterations can be grouped into three main groups of impacts. The first, changes in land use and land cover. The second refers to the alteration of bio-geochemical cycles that take place in different parts and in different ecosystems of the planet. And finally, changes in biodiversity. This global change has a magnitude and speed of change hitherto unknown, so it refers to the history of mankind. It is also for the first time one of the planet's own species that is causing these changes, which although usually dry, although their expressions are at regional and local level, it is certain that their manifestations are on a global scale.

As can be seen in this slide, we can then define this global environmental change as the interaction between different socio-economic and biophysical driving forces. This global environmental change manifests itself at different times and on different spatial scales. That is why we speak of its local, regional and global dimensions. Moreover, all these changes are occurring on a temporal scale .

The history of the planet has had several cycles of change throughout the different historical stages, from the Neolithic revolution to the present day. We have suffered different oscillations of change, but it is from 1950 onwards that we can consider the year of inflection, from which all these changes are magnified and their rate of appearance is increasingly higher. Changes in landscapes, changes in the intensification of the nutrient cycle, changes in the introduction of invasive species, changes in the water cycle, in the atmospheric chemistry cycle, and also changes in the size of the world population. This year 1950 is known by the scientific community as the year B.P. before petroleum, before present, the year from which there is a massive introduction of fossil fuels that obviously change the behavior of our ecosystems.

They are different. The indicators and aspects that we can see are changing substantially on planet Earth . We talk about the ecological Footprint as an indicator that measures the number of hectares that each of the individuals living on the planet would need to satisfy our needs. As we can see, in this map, there are substantial differences between what we know as the global north and the global south, in which the differences in consumption to meet these needs is unfairly very different.

Also, as I have mentioned, changes in the world population, we can see that since this Neolithic transition, in which 3 million people were counted around the planet, we have increased to almost 8 billion people today and it is predicted that in the year 2100 this number will increase to 11 billion people in the world. There are three big drivers, the three big forces of change that we are facing today, that relate to population, to the increase of the world's population. Not only do we have a higher life expectancy, but also the per capita consumption of the inhabitants of the planet is increasing more and more.

We can then see in these graphs how this world population is increasing. And not only that, but more and more of the world's population is concentrating in urban areas.

Another of the indicators that we use to see these changes that have been occurring in a significant way since 1950 are the alterations of the cycles, in this case of the atmospheric cycles. And we can see in this graph how effectively the concentrations of carbon dioxide in the atmosphere are increasing more and more, even surpassing the limits that were already established as maximums. At that time , in addition to the increase in

the average temperature of the planet , which is already almost at one point two degrees of increase in less than average .

As far as land use and land cover change is concerned, we can also see on this world map, how in certain areas of the planet, especially in these tropical and subtropical areas, deforestation rates are very latent, they are very important. Unlike what is happening in this global north , in which we can see that there is an increase of forest masses , especially in the Mediterranean area , where it can have very important effects on the water cycle , on biodiversity and also in the greater concurrence of large forest fires .

Here is a very illustrative image of what may be happening in different areas of the planet. This increase in forest mass in relation to the high rates of deforestation that are occurring in other areas of the planet.

Changes in biodiversity . Its main global causes are above all the destruction of habitats . Overexploitation of resources . Environmental pollution. Climate change and the introduction of invasive bio-invasive species may be deliberate or accidental in the face of this scenario of global change.

Faced with this scenario of ever more profound changes in our ecosystems, we firmly believe that we must change, that we must adopt a position of empowerment and not scare the population. But above all, we must be very aware of the panorama we have and be very aware that only through the empowerment of children's groups, of vulnerable groups, we can also change or try to change and reverse this situation. Also from knowledge, from training, from knowledge transfer. It is a good strategy to be able to know, to be able to appreciate the biodiversity and ecosystems that we have, to be able to face this ever-changing scenario, to be able to empower and not scare the population.

One of the proposals we have from the Edu-BioMed project is to integrate different forms of knowledge. On the one hand, tradition, empirical, traditional or popular knowledge, and on the other, scientific and academic knowledge. How to find these spaces of integration, of knowledge, of dialogue, of knowledge in relation to knowing our biodiversity? We have to consider a good tool. It is to consider our environment, our surroundings, as the best pedagogical tool.

And in this way we can bring citizens closer, we can bring our students closer to the knowledge of their immediate environment in order to be able to value it, to be able to conserve it and to be able to understand much better what is happening on a more global scale.

In this sense, for example, young people and adolescents are a group that has traditionally been excluded from decision making, and a commitment is also to include these groups that have much to contribute.

And their knowledge is also important to also consider women and women from the global south and other areas of the planet with vulnerable situations. They are people that we must also include in this decision-making process and also in this process of including different forms of knowledge. From this traditional knowledge to more scientific knowledge.

These are some of the guidelines that we can contribute from this project, from Edu-BioMed, to make our ecosystems, to make our world a habitable world, a fairer world and a world where these changes that we are accelerating at an unprecedented rate, we can somehow incorporate them into the functioning of ecosystems. Thank you very much.