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# Mitigation of climate change: sustainable use of land resources is essential

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**Abstract.** The Final Statement of the international conference “Global Forest and Tree Restoration”, organized by the Accademia Nazionale dei Lincei with the collaboration of FIDAF, other Italian scientific academies and FAO strongly reaffirms the urgency to act in order to mitigate climate change and indicates the restoration of ecosystems, with particular regard to forests as the most pressing action to be undertaken.

The World Economic Forum (WEF), listing the 10 key facts about climate change, reports that the expansion of agricultural areas is one of the major causes of the deforestation that has led to the acceleration of climate change. The sustainable use of land resources is therefore essential to halt the expansion of agricultural areas in order to stop deforestation. Close collaboration between governmental bodies, intergovernmental organizations, scientific institutions, civil society and the private sector is needed to support ecosystem design, planning, management and monitoring.

**Keywords:** Climate change; Mitigation; sustainability; land resources

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The international conference “Global Forest and Tree Restoration” organized by the Accademia Nazionale dei Lincei in partnership with the Food and Agriculture Organization of the United Nations, Enel Foundation, Accademia Nazionale delle Scienze detta dei XL, Accademia dei Georgofili, Accademia Nazionale di Agricoltura, Accademia Italiana di Scienze Forestali, Società Geografica Italiana, and Federazione Italiana Dottori in Agraria e Forestali (FIDAF) was held in Rome on 11-12 October 2022, under the high patronage of the President of the Italian Republic and with the patronage of the Ministry of Agricultural, Food and Forestry Policies and the Ministry of Ecological Transition (1). The Final Statement of the Conference strongly reaffirms the urgency to act in order to mitigate climate change and indicates the restoration of ecosystems, with particular regard to forests, as the action to be taken with greater urgency, as already suggested by the G20 Summit which took place in Rome on 30-31 October 2021, the UN Climate Change Conference (COP26), held in Glasgow on the 20<sup>th</sup> of October 2021, and reiterated by the Joint Environment and Climate Ministers' Meeting of the G20 held in Bali on the 31<sup>st</sup> of August of this year. The recommendation to stop deforestation was strongly emphasized (2).

The conference, introduced by the Nobel laureate in physics Giorgio Parisi, brought together researchers from all over the world with the aim of sharing data and analyzing experiences and the state of knowledge. The discussions held during the Conference remarked the essential role of forests in the preservation of ecosystems for the livelihood of present and future generations (3). Restoring ecosystems is also useful for soil and biodiversity protection, clean water supply, zoonosis prevention, health provision, production of cultural values, timber, feed, fuelwood and medicines, and could contribute to the creation of jobs, especially in contexts with high levels of youth unemployment and poverty. This would lead to greater social and political stability with more effective and adequate containment of migratory pressures.

Natural regeneration, assisted natural regeneration, farmer-managed natural regeneration, agroforestry, and active tree planting are useful strategies that can be implemented, while considering local site conditions including geo-morphological aspects, hydrological and meteorological conditions, climatic trends and their effects on forests, local communities, and the environment.

A critical point is the unsustainable management of cultivated areas, grasslands, and forests, but agriculture and forestry must be part of the solution, so higher integration of agroforestry activities and sustainable agro-ecological practices is required (1).

The World Economic Forum (WEF), listing the 10 key facts about climate change, reports that the expansion of agricultural areas is one of the major causes of the deforestation that has led to the acceleration of climate change. To meet the food demand of the growing population - the WEF adds - agriculture must focus on food security and measures such as soil conservation to sustainably increase crop yields. This is extremely important. In fact, agricultural production cannot be reduced because it must satisfy a constantly increasing food demand. It is certainly possible – indeed we must – to intervene to reduce the phenomenon of food loss and waste, which today affects almost a third of food production, but the amount that could be saved would not cover the increase in demand from a growing and increasingly urbanized global population. We can also – and must – work to make food consumption more informed, directing it towards

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products obtained through more sustainable practices. Interventions for ethical, economic, social and environmental reasons are necessary, but still not enough to significantly reduce global food needs.

To stop deforestation, the expansion of agricultural areas must first of all be halted: as the WEF reminds us, the sustainable use of land resources is in fact essential to achieve climate change mitigation objectives. Producing more food without increasing the use of land resources means intensifying agricultural production, by increasing its productivity with the goal of obtaining more food per unit area. At the same time intensification must be sustainable, adopting techniques for the conservation of soil fertility and biodiversity, for integrated management of pathogens and parasites, for efficient use of all means of production, first of all water, for example through the application of precision agriculture practices. So it is first of all necessary to increase knowledge at the level of field, farms, territories, in the form of research, innovation, technical consultancy, training and education.

The Common Agricultural Policy (CAP) does not always seem to pursue these objectives. It seems instead aimed at extensifying agricultural production, reducing its productivity and production, and encouraging recourse to imports to satisfy internal demand. Importing more foodstuff can mean encouraging the destruction of forests and natural areas in exporting countries (2).

The final statement of the Conference emphasizes that policy makers, public and private funding agencies, stakeholders and the public at large need to be informed in order to support ecosystem design, planning, management and monitoring. The forest restoration policy should promote collaborative approaches such as knowledge sharing, participatory deliberative processes and innovation co-creation with local communities and stakeholders, taking into account gender equality. Forest deployment at scale requires public-private partnerships to help synergize public funding and private investments. We need to attract the interest of the private sector and regulate their inter-relationships transparently. It is also important to promote close collaboration between governmental bodies, intergovernmental organizations, scientific institutions, civil society and the private sector to overcome technical, political, legal and financial shortcomings. Integrating existing platforms into a Global Forest Restoration Database can help synchronize existing and future initiatives, support the sharing of open data on forest health monitoring and other key forest restoration activities (1).

## References

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