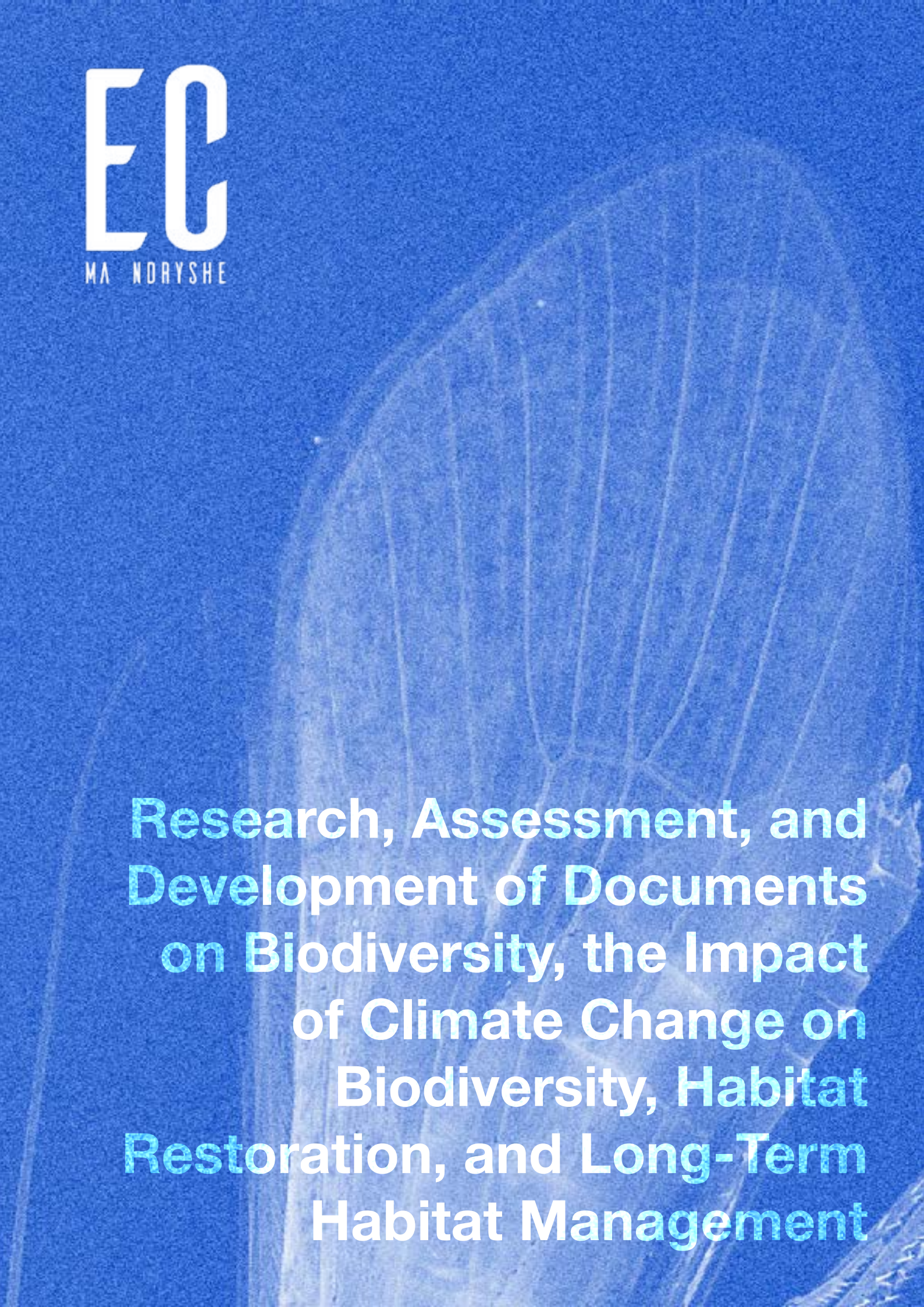

Research, Assessment, and Development of Documents on Biodiversity, the Impact of Climate Change on Biodiversity, Habitat Restoration, and Long-Term Habitat Management

Importance of Habitat Restoration

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The report "Importance of Habitat Restoration" was produced within the framework of the project "Empowering Environmental Civil Society Organizations in Kosovo (EECSOK)", supported by the Swedish Embassy in Pristina and implemented by the Community Development Fund – CDF. The content and views presented herein do not represent the official position of the donors.

2025

EXECUTIVE SUMMARY

This project “Research, assessment, and development of documents on biodiversity, the impact of climate change on biodiversity, habitat restoration, and long-term habitat management” offers an interdisciplinary approach by integrating spatial planning, legal frameworks, and ecological expertise alongside qualitative, scientific analysis. By combining knowledge from various fields, the aim is to create a comprehensive understanding of biodiversity challenges. The project emphasizes the importance of collaboration among environmental science, policy, and spatial design, creating a foundation for adaptive management strategies informed by both ecological data and spatial dynamics. This ensures that future actions are grounded in a well-informed, comprehensive perspective.

The project aims to identify and map key biodiversity areas at risk, focusing on Prizren, Suharekë, and the Sharr Mountains. Through field assessments, GIS data, spatial maps, spatial ecology analyses, and existing management plan reviews, critical habitats will be identified. These will be compared with historical and current climate patterns to predict future ecological changes and assess the impact of climate variability on biodiversity. Additionally, the project will evaluate the need for habitat restoration, documenting both the ecological and social benefits of restoration efforts.

This report focuses specifically on habitat restoration, examining how strategies, governance arrangements, and financing mechanisms can deliver ecological, social, and economic benefits across protected and non-protected landscapes. Through a literature and policy review, three comparative case studies and a tailored impact-assessment framework with a scoring criteria, the report identifies enabling conditions, common barriers, and practical indicators for planning, monitoring, and scaling restoration.

BACKGROUND

1

The methodology applied in this phase is designed to assess and document the ecological, social, and economic significance of habitat restoration. It follows a multi-layered approach that combines the review of existing knowledge with field-based inquiry, analysis of case studies, and stakeholder engagement. The process begins with a comprehensive review of scientific literature and policy documents to understand established benefits, methodologies, and lessons learned. This is complemented by a systematic analysis of case studies that provide insights into effective restoration practices, contextual challenges, and tangible outcomes.

In parallel, field visits and interviews with local communities and environmental experts are conducted to gather situated knowledge and perspectives on potential restoration areas. All findings — from literature, case studies, field observations, and stakeholder input — are compiled into a structured knowledge database, serving as a foundation for interpretation and reflection. The results are then consolidated into a comprehensive synthesis that highlights the multifaceted benefits of restoration efforts and offers context-specific recommendations to guide future initiatives.

This study begins with a thorough review of the literature on habitat restoration, distilling key themes, methods, and critical debates to establish the conceptual and methodological baseline. Building on these insights, a set of selected case studies that illustrate different restoration approaches are analyzed, enabling a structured comparison of methods and the identification of their strengths, challenges, and outcomes. Together, the review and comparative analysis aim to provide a comprehensive understanding of the diverse strategies currently employed in habitat restoration.

The three case studies reflect distinct restoration logics: (1) habitat- or basin-scale restoration focused on an ecological entity or territory; (2) keystone/flagship species–led recovery; and (3) landscape restoration shaped by land-use conflicts and the pursuit of multi-benefit solutions. For example, the Danube Delta Restoration Project demonstrates how wetland recovery can support ecological integrity and local economies through collaborative action; the Iberian lynx reintroduction in the Iberian Highlands shows how species-specific planning can catalyze wider ecological recovery; and the LIFE El Hito Project in Cuenca, Spain, highlights innovative pathways that align habitat goals with the interests of landowners and local communities. Collectively, these cases underscore the value of well-planned restoration that integrates ecological and socioeconomic objectives.

INTRODUCTION

2

This report synthesizes current evidence on habitat restoration to clarify why—and how—restoration advances ecological integrity, social well-being, and economic resilience. It establishes the conceptual baseline through a literature and policy review and applies it to comparative case studies to distill actionable insights for practice and decision-making in European contexts.

Climate change and biodiversity loss are mutually reinforcing risks that restoration can help address. Restored habitats sequester carbon and buffer climate impacts by stabilizing soils, regulating water, and moderating local microclimates. At the same time, restoration strengthens ecological resilience—expanding habitat quality and connectivity so species can adapt to shifting conditions and reducing system-level vulnerability.

Restoration is no longer experimental at the policy level. The UN Decade on Ecosystem Restoration (2021–2030) frames a global mandate to scale action, while European targets embed restoration within core environmental legislation and planning, creating pathways for funding, monitoring, and long-term stewardship. This institutionalization translates into established practices, standards, and investment mechanisms that enable delivery on the ground.

Recognizing Europe's multifunctional landscapes, this study considers both protected and non-protected areas, beginning from aquatic insects as sentinel taxa. As sensitive bioindicators, aquatic insects reflect water quality, hydromorphological condition, and riparian habitat integrity, linking freshwater health to broader terrestrial processes. This perspective supports an integrated approach that connects conservation goals with agriculture, urban development, and other land uses, guiding restoration where it yields the greatest ecological and socio-economic returns.

The analysis is grounded in three contrasting case studies—a basin/habitat-scale process restoration (Danube Delta), a keystone species–led recovery (Iberian lynx), and a land-use negotiation model (LIFE El Hito)—to illustrate the range of viable pathways and their enabling conditions.

THE BENEFITS OF HABITAT RESTORATION

3

HABITAT RESTORATION REBUILDS ECOSYSTEMS, SUPPORTS COMMUNITIES, AND BOOSTS ECONOMIES. IT PROVIDES CLEAN WATER, AIR, FOOD SECURITY, AND JOBS WHILE STRENGTHENING CLIMATE RESILIENCE AND BIODIVERSITY. THROUGH LOCAL AND GLOBAL COOPERATION, IT DRIVES SUSTAINABLE DEVELOPMENT AND WELL-BEING.

REVIEW OF EXISTING LITERATURE

4

THIS CHAPTER REVIEWS LITERATURE AND CASE STUDIES ON HABITAT RESTORATION, SHOWING HOW ACTIVE, PASSIVE, AND REWILDING STRATEGIES CAN REVERSE DEGRADATION, BOOST BIODIVERSITY, AND SUPPORT SUSTAINABLE DEVELOPMENT DESPITE POLICY AND FUNDING CHALLENGES.

CHALLENGES OF LANDSCAPE RESTORATION IN EUROPE: BARRIERS TO SUCCESSFUL HABITAT RESTORATION

5

LANDSCAPE RESTORATION IN EUROPE FACES MAJOR ECOLOGICAL, SOCIOECONOMIC, AND POLICY BARRIERS. KEY ISSUES INCLUDE INVASIVE SPECIES, FRAGMENTED HABITATS, ECONOMIC PRESSURES ON RURAL COMMUNITIES, AND COMPLEX BUREAUCRATIC AND REGULATORY SYSTEMS. DESPITE THESE CHALLENGES, OPPORTUNITIES EXIST THROUGH REWILDING, PUBLIC SUPPORT FOR BIODIVERSITY, AND NATURE-BASED ECONOMIES. SUCCESS DEPENDS ON LONG-TERM STRATEGIES THAT INTEGRATE ECOLOGICAL RESTORATION WITH COMMUNITY ENGAGEMENT, ADAPTIVE MANAGEMENT, AND STRONGER POLICY FRAMEWORKS.

ECOSYSTEM RESTORATION CLIMATE RESILIENCE AND SOCIOECONOMIC BENEFITS

6

ECOSYSTEM RESTORATION IS A KEY CLIMATE SOLUTION THAT BOOSTS BIODIVERSITY, STRENGTHENS RESILIENCE, AND SUPPORTS COMMUNITIES. IT IMPROVES WATER AND AIR QUALITY, FOOD SECURITY, AND SUSTAINABLE FARMING, WHILE CREATING JOBS AND ECONOMIC OPPORTUNITIES. SUCCESS RELIES ON CROSS-BORDER COOPERATION, COMMUNITY ENGAGEMENT, EDUCATION, AND POLICY INTEGRATION. RESTORATION NOT ONLY MITIGATES CLIMATE CHANGE BUT ALSO ENHANCES HEALTH, CULTURAL WELL-BEING, AND LONG-TERM PROSPERITY.

MONITORING HABITAT RESTORATION: STRATEGIES, FRAMEWORKS, AND TOOLS

7

MONITORING IS ESSENTIAL FOR SUCCESSFUL HABITAT RESTORATION, ENSURING PROJECTS MEET ECOLOGICAL, SOCIAL, AND CLIMATE GOALS. IT COMBINES FRAMEWORKS, ADAPTIVE MANAGEMENT, BASELINE DATA, AND TECHNOLOGY LIKE DRONES, SATELLITES, AND AI WITH COMMUNITY KNOWLEDGE. TOOLS ALSO TRACK CARBON MARKETS, BIODIVERSITY, AND SOCIOECONOMIC IMPACTS, MAKING RESTORATION MORE TRANSPARENT, ACCOUNTABLE, AND SUSTAINABLE.

THE ROLE OF PARTNERSHIP DEVELOPMENT IN HABITAT RESTORATION

8

PARTNERSHIPS ARE ESSENTIAL FOR SUCCESSFUL HABITAT RESTORATION, LINKING GOVERNMENTS, COMMUNITIES, NGOS, AND BUSINESSES TO ACHIEVE BOTH ECOLOGICAL RECOVERY AND SOCIAL JUSTICE. INCLUSIVE STAKEHOLDER ENGAGEMENT, KNOWLEDGE SHARING, AND FAIR BENEFIT DISTRIBUTION BUILD TRUST AND RESILIENCE, WHILE LEGAL FRAMEWORKS LIKE THE EU NATURE RESTORATION LAW SUPPORT TRANSPARENT, CROSS-SOCIETY COLLABORATION. DESPITE CHALLENGES, STRONG PARTNERSHIPS AND ADAPTIVE POLICIES ENSURE RESTORATION PROJECTS DELIVER LASTING ECOLOGICAL, SOCIAL, AND ECONOMIC BENEFITS.

FUNDING AND ECONOMIC ASPECTS OF HABITAT RESTORATION

9

SECURING FINANCE FOR LARGE-SCALE ECOSYSTEM RESTORATION REQUIRES DIVERSE STRATEGIES, INCLUDING PUBLIC FUNDING, PRIVATE INVESTMENT, PES SCHEMES, GREEN BONDS, AND CARBON MARKETS. NATURE-BASED ENTERPRISES AND COMMUNITY-LED MODELS LINK CONSERVATION WITH ECONOMIC OPPORTUNITIES, WHILE INNOVATIVE TOOLS LIKE BLOCKCHAIN AND REMOTE SENSING IMPROVE TRANSPARENCY. EXPANDING CARBON MARKETS AND BLENDED FINANCE CAN UNLOCK MAJOR FUNDING, MAKING RESTORATION BOTH ECOLOGICALLY AND ECONOMICALLY SUSTAINABLE.

SPECIES SELECTION FOR REINTRODUCTION IN HABITAT RESTORATION

10

SPECIES SELECTION FOR REINTRODUCTION FOCUSES ON RESTORING ECOLOGICAL BALANCE THROUGH KEYSTONE SPECIES, CONSIDERING HISTORICAL ROLES, CURRENT HABITAT CONDITIONS, AND BIOGEOGRAPHY. SUCCESS DEPENDS ON CAREFUL MONITORING, ADAPTIVE MANAGEMENT, AND STRONG LOCAL COMMUNITY INVOLVEMENT TO ALIGN ECOLOGICAL GOALS WITH SOCIAL AND CULTURAL CONTEXTS.

SITE SELECTION FOR HABITAT RESTORATION

11

SITE SELECTION FOR HABITAT RESTORATION REQUIRES BALANCING ECOLOGICAL, SOCIO-ECONOMIC, AND PRACTICAL FACTORS. KEY CONSIDERATIONS INCLUDE CLIMATE, SOIL, WATER QUALITY, SPECIES INTERACTIONS, AND HABITAT CONNECTIVITY, ALONGSIDE LAND OWNERSHIP, STAKEHOLDER ENGAGEMENT, AND ECONOMIC COSTS AND BENEFITS. ACCESSIBILITY, LONG-TERM MANAGEMENT, AND SUSTAINABILITY ARE ALSO CRUCIAL TO ENSURE RESTORATION SUCCESS AND RESILIENCE.

EDUCATION AND WILDERNESS EXPLORATION: RECONNECTING PEOPLE TO REWILDING

12

EDUCATION AND WILDERNESS EXPLORATION ARE VITAL FOR REWILDING SUCCESS, FOSTERING CULTURAL SHIFTS THAT RECONNECT PEOPLE WITH NATURE. BY COMBINING ENVIRONMENTAL EDUCATION, YOUTH ENGAGEMENT, AND TRADITIONAL ECOLOGICAL KNOWLEDGE, THESE EFFORTS BUILD STEWARDSHIP, SUPPORT BIODIVERSITY, AND INTEGRATE RESTORATION INTO BOTH FORMAL LEARNING AND COMMUNITY PRACTICES.

About EC

EC Ma Ndryshe is a community-based organization, established in 2006, committed to sustainable development through an inclusive approach.

EC's activism envisions a Kosovo where democratic governance is participatory, transparent, and accountable, ensuring that institutions, communities, and stakeholders work together towards sustainable development.

This vision promotes inclusive decision-making, stronger policies, and greater public participation, ensuring that sustainability is an integral part of governance at both local and national levels.

Through better institutional coordination, evidence-based policymaking, and citizen engagement, EC's work aims to bridge the gap between communities and institutions, ensuring that good governance leads to tangible and lasting change.

Vision statement

"Empowering a resilient and inclusive Kosovo, where communities actively shape sustainable, digitalized, and conscientious institutions."

Mission statement

"EC Ma Ndryshe supports democratic governance and sustainable development in Kosovo by fostering sustainable socioeconomic, cultural, and green growth through digital education, environmental stewardship, community mobilization, advocacy for participatory public decision-making, and the cultivation of strategic partnerships."

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