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Research Paper

A New Paradigm for in-Situ Conservation, other Effective Area- Based Conservation Measures; Case of Karacadag Steppes

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Abstract: Protected areas are the most important cornerstones in the protection of natural resources and biodiversity. At the same time, they provide benefits to residents and are also instruments that contribute to the implementation of international agreements. They are known by a multitude of names in different countries and are governed according to both nationally and internationally accepted agreements and/or approaches. The International Union for the Conservation of Nature (IUCN) has created a classification system that identifies six categories of protected area according to their management objectives to create a common understanding for each category. While the protected areas are an essential and continually growing approach to conservation, there is difficulties to applicate universally for the conservation of biodiversity. Therefore, apart from national and regional protected areas, various tools and networks also contribute to the effective in-situ conservation of natural resources and biodiversity. 'Other Effective area-based Conservation Measures' (OECMs) have been recognized as an important opportunity to achieve this aim. The OECMs has the potential to promote a new model for conservation that fosters inclusive approaches and equitably governs land, forests, freshwater and oceans to achieve long-term conservation, as well as social, economic, and cultural wellbeing. In the October 2023, total 870 number of OECMs in the world. For Türkiye, a case study was carried out and an OECMs assessment report prepared for Karacadağ Steppes in the scope of "Conservation and Sustainable Management of the Türkiye's' Steppe Ecosystems Project " that was implemented between 2017-2022 by the FAO and the Ministry of Agriculture and Forestry. It is the first case for Türkiye and introduced the OECM approach to the policy agenda as well.

Keywords: *Protected area, Nature conservation, OECMs, Karacadag-Sanliurfa*

Introduction

Protected areas are an essential and continually growing approach to conserve biodiversity and the natural environment. In addition to conserve natural values, these areas are also supported to increase nature awareness, rural development, reduce the possible effects of climate change, strengthen cooperation opportunities with many different partner groups and gaining experiences in nature. The most widely accepted definition of a protected area was developed by the International Union for Conservation of Nature (IUCN) in 2008: A clearly defined geographical space, recognized, dedicated, and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values. (Dudley, 2008). This brief definition encompasses four critical facets: spatial, set aside, long-term and nature. In application, the term 'nature' has been broadly interpreted to include landscapes and seascapes where human activities have considerably altered the original state, but where natural values are still considered as conservation targets (Boucher *et al*., 2013).

Although protected area classifications and management approaches vary from country to country, protected area management categories classified by IUCN; Ia. Strict nature reserves, Ib. Wilderness areas, II. National parks, III. National monuments, IV. Habitat/species management areas, V. Protected landscapes/seascapes, VI. Protected areas with sustainable use of natural resources (Dudley, 2008) are most widely accepted categorizations. Even if many protected areas do not appropriate gracefully into these definitions, still they are the most effective tools for protecting biodiversity. In addition to conserve biodiversity and natural values, protected areas also promote many other environmental, social, and economic benefits. For instance, the functions of protected areas include strengthening social welfare, protecting local security, and providing multi-scale economic benefits (Naughton-Treves and Holland,

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2005). The value of protected areas is well known. In addition, their role in climate change mitigation and adaptation is understood. Due to these benefits, protected areas are becoming increasingly important (Dudley *et al*., 2011).

According to statistics updated in September 2023 by Protected Planet, the most reliable protected area data source at the global level, there are 266,985 protected areas in terrestrial areas (including inland waters) worldwide, and these protected areas cover 16.02% of all terrestrial areas. The number of protected areas in marine ecosystems is 18,431, and the ratio of these protected areas to the total marine area is 8.17% (https://www.protectedplanet.net, 2023). However, while the number and size of protected areas increases, biodiversity loss continues unabated in globally (UNEP-WCMC, 2017). Still, the existing global system of protected areas is inadequate in several ways. (i) protected areas are still incomplete, and do not cover all biomes and critical species; (ii) protected areas are not fulfilling their biodiversity conservation objectives; (iii) participation of local people in establishment and management of protected areas is inadequate; and (iv) protected areas in developing countries are poorly funded (Dudley, *et.al.* 2005).

Very important steps have been taken at the global level since 1972 towards today strengthening the existing global protected areas system and reducing biodiversity losses. This process is summarized in figure 1.

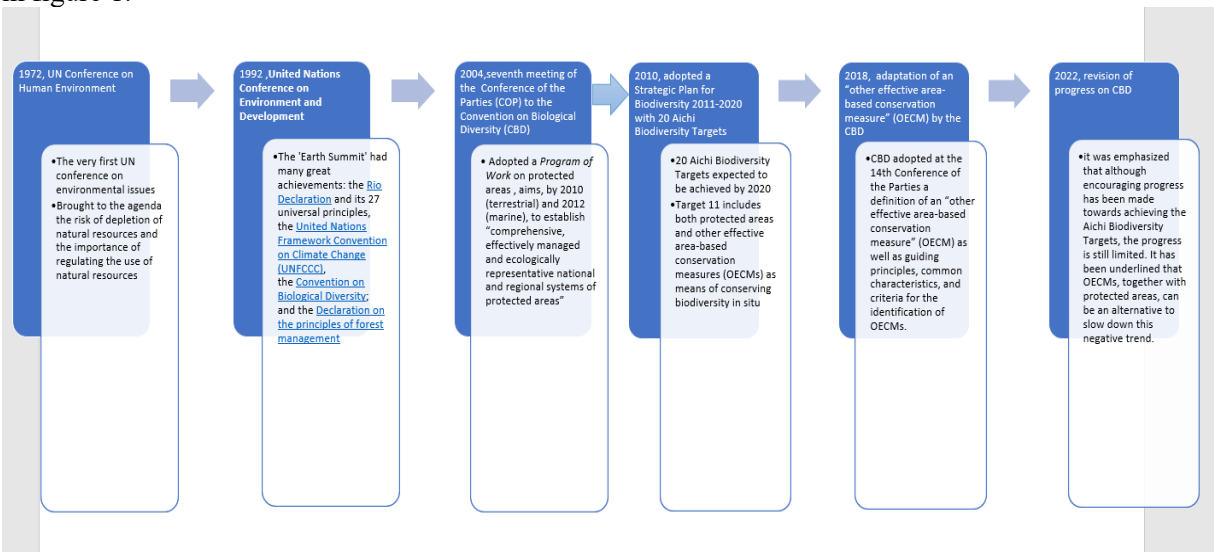

Figure 1. Global initiatives to strengthen protected area systems since 1972

The 1972 UN Conference on the Human Environment which was the very first UN conference on environmental issues, held in Stockholm, brought to the agenda the risk of depletion of natural resources and the importance of regulating the use of natural resources to better protect resources and ecosystems. Although the 1972 Stockholm Declaration laid out the fundamental principles for sustainability resource governance, the pressures on the environment were continued at an increasing rate. Since Stockholm, numerous multilateral agreements have developed a range of operational guidelines, targets, and standards. Some intergovernmental frameworks, such as the Convention on Biological Diversity (CBD) is one of the main initiatives to focus on sustainable management of the natural environment (Bansard and Schröder, 2021). Despite efforts since the 1970s, current trends in natural resource use are unsustainable and continue to have potentially devastating consequences. So much so that it has required new decisions to be taken to produce more permanent solutions and reduce biodiversity losses.

The seventh meeting of the Conference of the Parties (COP) to the Convention on Biological Diversity (CBD) in 2004 taking impetus provided by the Millennium Development Goals, the Plan of Implementation of the World Summit on Sustainable Development and the Durban Accord and Plan of Action from the Vth World's Parks Congress, adopted a *Program of Work* on protected areas one of the most ambitious environmental strategies in history. The Program aims, by 2010 (terrestrial) and 2012 (marine), to establish "comprehensive, effectively managed and ecologically representative national and regional systems of protected areas" (Dudley *et.al*., 2005). By 2010, it was seen that the targets set in 2004 were far behind and that the current protected area system was insufficient to protect natural resources and biodiversity or to create comprehensive, effectively managed, and ecologically representative

national and regional protected area systems.

In 2010, Parties to the Convention on Biological Diversity adopted a Strategic Plan for Biodiversity 2011-2020 with 20 Aichi Biodiversity Targets expected to be achieved by 2020. Target 11 includes both protected areas and other effective area-based conservation measures (OECMs) as means of conserving biodiversity in-situ (IUCN WCPA, 2019). Under the Strategic Plan for Biodiversity 2011-2020, Aichi Biodiversity Target 11 states: By 2020, at least 17 per cent of terrestrial and inland water areas and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscape and seascape (CBD, 2010). Parties to the Convention on Biological Diversity (CBD) recognized early in the CBD's Strategic Plan (2011-2020) that 'other effective area-based conservation measures' (OECMs) offer a significant opportunity to contribute to the effective in-situ conservation of biodiversity (UCN-WCPA Task Force on OECMs, 2019).

In 2018, this situation was remedied when Parties to the CBD adopted at the 14th Conference of the Parties a definition of an "other effective area-based conservation measure" (OECM) as well as guiding principles, common characteristics, and criteria for the identification of OECMs (CBD/ COP/DEC/14/8). Decision 14/8 defines an OECM as: A geographically defined area other than a Protected Area, which is governed and managed in ways that achieve positive and sustained long-term outcomes for the in-situ conservation of biodiversity with associated ecosystem functions and services and where applicable, cultural, spiritual, socio–economic, and other locally relevant values (CBD, 2018).

In 2022, the progress in the implementation of the Convention and the 2011-2020 Biodiversity Strategic Plan and the achievement of the Aichi Biodiversity Targets were reviewed, and it was emphasized that although encouraging progress has been made towards achieving the Aichi Biodiversity Targets, the progress is still limited (CBD, 2022a). However, at the global level, biodiversity losses continue to be depleted at an irreversible rate and sensitive ecosystems continue to be fragmented. Even current conservation efforts and initiatives cannot slow down the rate of change in our natural environment. Climate change is accelerating this change even further. A key problem is the mismatch between the artificial 'economic grammar' which drives public and private policy and 'nature's syntax' which determines how the real world operates. Biodiversity conservation is more than an ethical commitment for humanity: it is a non-negotiable and strategic investment to preserve our health, wealth, and security (WWF, 2020). Unfortunately, many efforts and initiatives that have continued until today have not been able to prevent human destruction of nature. On the other hand, major disaster, or turbulent situations in the region, such as Covid 2019 or natural disasters such as major fires and floods, may reveal new ideas, processes, and transformation opportunities. OECMs, together with protected areas, can be an alternative to slow down this negative trend. OECMs can support contributions to conservation globally by bringing together more stakeholders and encouraging more equitable partnerships in global conservation efforts.

In doing so, OECMs will contribute to the conservation of biodiversity in many ways, such as: conserving important representative ecosystems, habitats, and wildlife corridors; supporting the recovery of threatened species; maintaining ecosystem functions and securing ecosystem services; enhancing resilience against threats; and contributing to improved management and restoration of areas that could usefully support long-term in-situ conservation of biodiversity. OECMs can contribute to ecologically representative and well-connected systems of protected and conserved areas, integrated within wider landscapes and seascapes (IUCN-WCPA Task Force on OECMs, 2019). OECMs are intrinsically important as local social-ecological systems. They form integral parts of national biodiversity strategies, underpin sustainable economies, and contribute to global biodiversity targets and the Sustainable Development Goals (Marnewick, *et.al*., 2020).

The Convention on Biological Diversity's (CBD) '2050 Vision' aims to achieve, by 2050, a world that is 'living in harmony with nature.' Yet biodiversity is threatened globally to an extent never before witnessed in human history. The *Global Assessment of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services* (*IPBES Global Assessment*) found that a sustainable global future for people and nature remains possible. However, this can only be achieved if we fundamentally redesign our economic, social, and governance systems (Lim, 2021).

The total number of protected area records in the October 2023 release of the World Database on Protected Areas (WDPA) is 287,359, comprising 275,357 polygons and 12,002 points and covering 244

countries and territories. The total number of other effective area-based conservation measures (OECMs) in the October 2023 release of the WD-OECM is 870, comprising 734 polygons and 136 points and covering 9 countries and territories (https://www.protectedplanet.net, 2023). The number of OECMs will be increased, however, most countries have not yet provided data to the World Database on OECMs, therefore, the current statistical data is seeing low. It is expected that OECMs will complement protected areas and deliver effective conservation of biodiversity.

Türkiye signed the CBD in 1992 and approved it with Law No. 4177 dated 1996. CBD parties are making efforts to implement the meeting decisions. Consequently, the National Biodiversity Strategy and Action Plan (2007-2017) was prepared by the Government of Türkiye, and then updated the national biological strategy and action plan to cover the years 2018-2028, including the 2011-2022 BD strategic plan and Aichi targets, in line with the CBD COP10/2 meeting decisions (MoAF, 2019). Türkiye, which has carried out many studies on the protection of biological diversity at the national level since 1992, carries out its studies on the protection of biological diversity by updating its national biological diversity strategy and action plan and with both protected areas and specific species conservation programs. In Türkiye, biological

diversity and natural-cultural landscapes are protected with several categories such as national park, nature park, nature reserve, wildlife development area, wetland of national and international importance, special environmental protection area, and conservation forest. The ratio of protected areas to the country's surface area in Turkey is around 10% (Yenilmez Arpa *et.al*., 2022). However, the problems experienced at the global level and the pressures on natural values and biological diversity continue without slowing down. The current protected area system is not sufficient to protect the country's rich biodiversity. No serious steps have been taken yet regarding the implementation of initiatives that will support in-situ conservation in protected areas such as OECMs. There is only one case on OECM but only assessment report was prepared for Karacadağ Steppes in the scope of "Conservation and Sustainable Management of the Türkiye's' Steppe Ecosystems Project " that was implemented between 2017-2022 by the FAO and the Ministry of Agriculture and Forestry. It is the first case for Türkiye and introduced the OECM approach to the policy agenda as well.

Material and Method

Study area

The proposed Karacadağ Steppes OECM lies predominantly in Şanlıurfa Province, as shown in Figure 2, but this volcanic mountain range extends eastwards into Diyarbakır Province and covers a fraction of Mardin Province to the south-east.

The entire mountain range and its predominantly steppe vegetation is proposed as a Natural Site by the Ministry of Environment and Urbanization under the 2863 Protection of Cultural and Natural Assets Law. The proposed Natural Site overlaps with the mountainous part of the proposed Karacadağ Steppes OECM, as shown in Figure 3.

The Karacadag steppes is also one of the Key Biodiversity Areas (KBAs) – the sites of global importance for biodiversity conservation- which have been 313 KBAs in Türkiye (Eken, *et.al*., 2016). Site details of Karacadag KBA is given in Table 1.

Table 1. Site overview of Karacadag KBA (Key Biodiversity Areas Partnership, 2023)

Global KBA criteria: **Year of assessment:** 2017 **National site name:** Karacadağ **Central coordinates:** Lat: 37.68 Long: 39.83 **System:** Terrestrial **Altitude (m):** 850 to 1,981 **Area of KBA (ha):** 135,696 **Protected area coverage (%):** 0	**Rationale for qualifying as KBA:** This site qualifies as a Key Biodiversity Area of international significance because it meets one or more previously established criteria and thresholds for identifying sites of biodiversity importance (including Important Bird and Biodiversity Areas, Alliance for Zero Extinction sites,and Key Biodiversity Areas) KBA identified in the CEPF Ecosystem Profile of the Mediterranean Hotspot (2017). Taxonomy, nomenclature and global threat category follow the 2016 IUCN Red List.

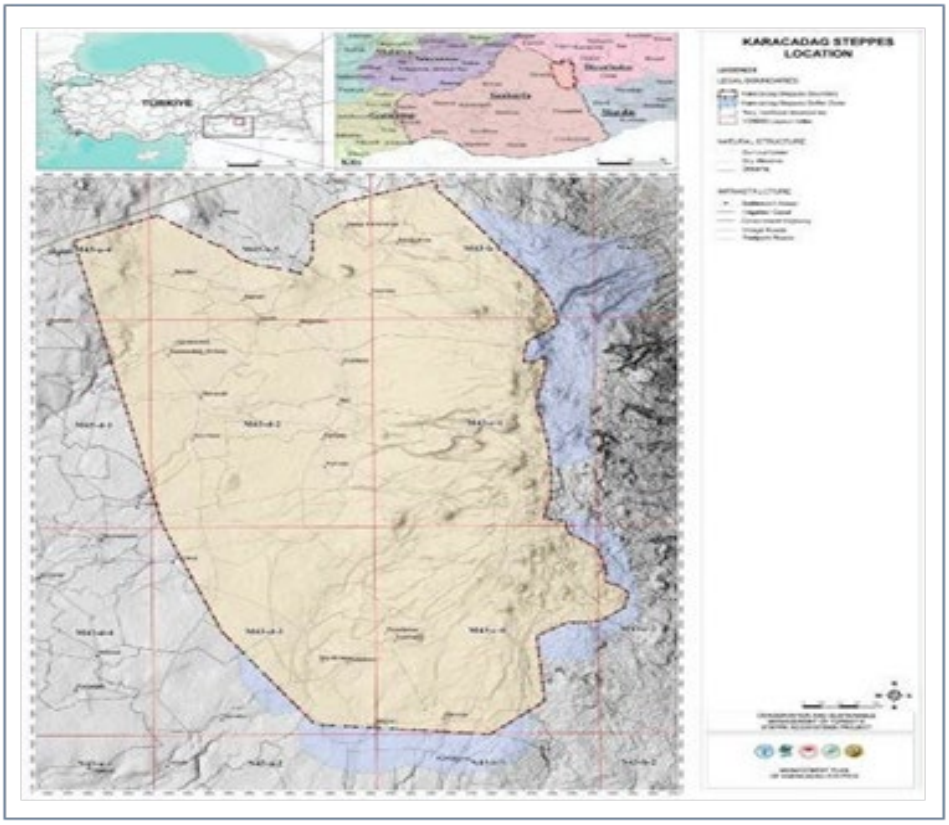

Figure 2. Location of Karacadağ Steppes (60,000 ha), a potential OECM, in South-eastern Anatolia (FAO-MAF.2022a**).**

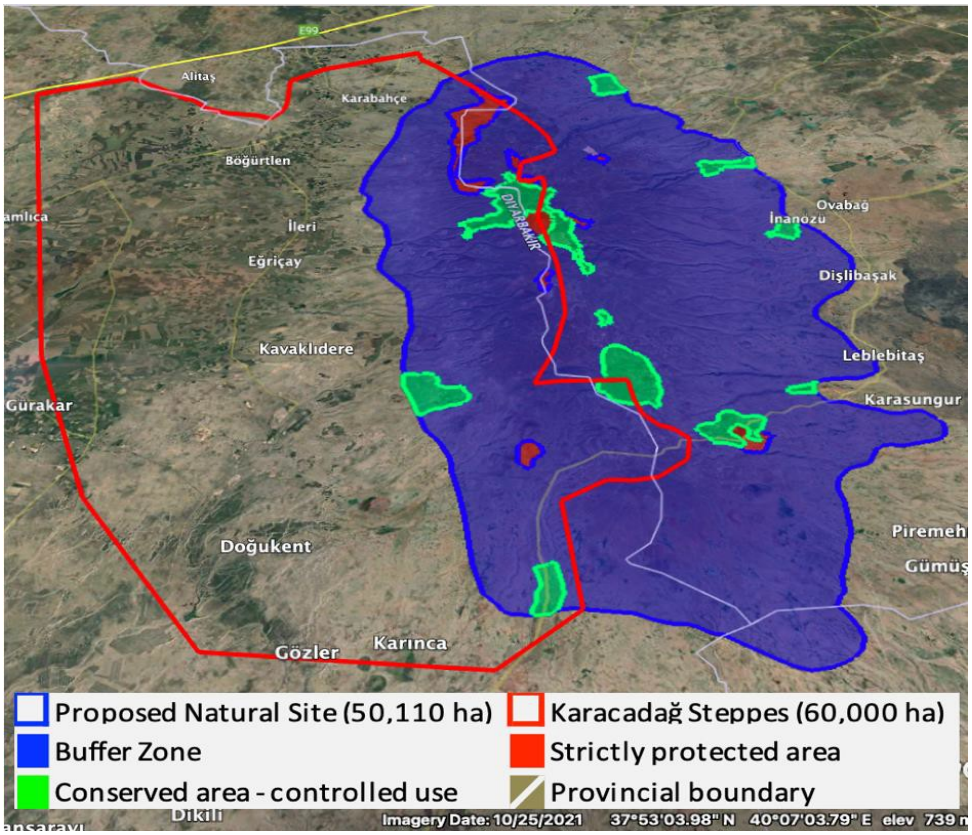

Figure 2. Karacadağ Steppes (60,000 ha), potential OECM site, and the overlapping proposed Natural Site

Şanlıurfa Province (1,941,343 ha) lies almost entirely within the potential steppe zone, 39% of which remains steppe (761,688 ha) and steppe forest (1,714 ha). Karacadag is high critical and vulnerable area regarding to wild crop of cultivated agricultural species (Figure 4) (FAO- MAF.2022b).

Site-level methodology (Marnewick, et all., 2020) which was drafted by IUCN World Commission on Protected Areas for identifying other effective area-based conservation measures (OECMs) of Karacadag has been implemented. The site-level methodology assists potential OECMs to be identified and individual sites to be assessed on a case-by-case basis. For those sites that do not yet meet all criteria, the methodology also helps to identify the characteristics of the site which would need to be strengthened for an area to qualify as an OECM. The methodology for identifying OECMs consists of three steps, which should be followed sequentially.

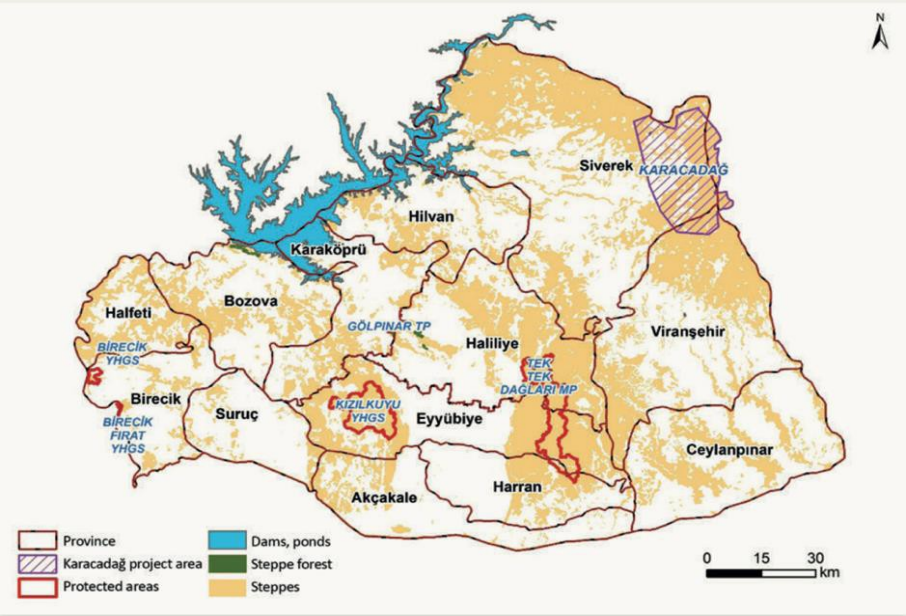

Figure 4. Distribution of protected areas (Tek Tek Mountains NP Park; Kızılkuyu , Birecik and Sanliurfa Birecik Fırat WRs) with respect to Şanlıurfa Province's remaining steppe (761,688 ha) and steppe forest (1,714 ha) (FAO-MAF, 2022b)

- **Step 1: Screening** uses basic information on a site to determine if it is a potential OECM.
- **Step 2: Consent** confirms that the governing authority and other rights-holders have agreed to the assessment going ahead.
- **Step 3: Full assessment** uses further criteria to confirm that the site meets the definition of an OECM.

Step 1 and 2 can be carried out in any order or combined. Step 1 and 2 should be completed before step 3 is implemented (IUCN/WCPA 2022). Step 1 contains the four-step screening tool, directly linked to the definition that enables a determination of whether a site is a 'potential OECM', Step 2 provides for the legitimate governance authority to clearly state whether consent to an assessment has been given and Step 3 contains full assessment uses further criteria to confirm that the site meets the definition of an OECM (Marnewick, *et all*., 2020; and IUCN/WCPA 2022). These steps including the sub-details of each step of the method is given in Figure 5.

Due to not having a protection status yet, "IUCN Category VI: Protected area where natural resources are used sustainably" (Dudley, 2008) has been considered for Karacadağ steppes within the scope of Türkiye's Steppe Ecosystems Conservation and Sustainable Management Project. A management plan for Karacadag steppes was developed in line with the primary management objectives of Category VI.

OECM assessment for Karacadağ steppes was carried out in the last years of the implementation period of the GEF-supported project, *Conservation and Sustainable Management of Türkiye's Steppe Ecosystems*. A comprehensive baseline surveys on biodiversity and socio-economic situation, land management plan, grazing management plan, multi-species action plan, monitoring program and public awareness and

training activities were carried out Therefore, there was a lot of data to facilitate the evaluation process, and the stakeholders were sufficiently informed about the importance of the Karacadağ steppes. Due to having both updated and wider information on the potential Karacadag OECM, Screening (step 1) carried out both with a desk exercise and also participatory meetings with experts. A full assessment has been conducted in close cooperation with both planning team and an international expert on biodiversity and protected areas together with project coordinator.

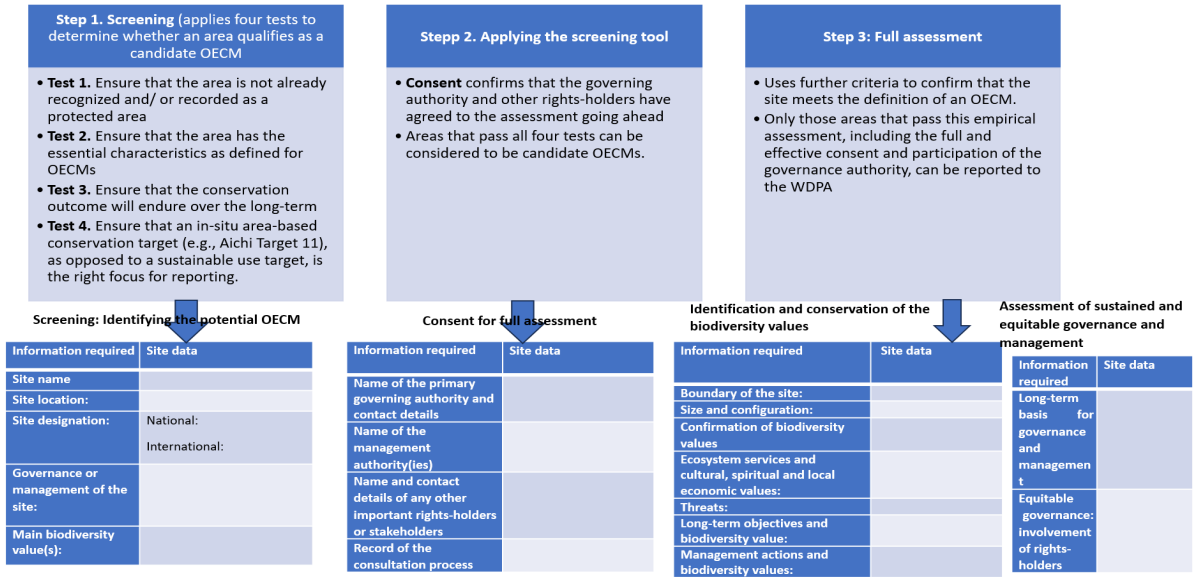

Figure 5. A 3-step methodology and sub-details

Research Findings

Şanlıurfa province is one of the most important areas in Türkiye in terms of steppe ecosystems, and the natural vegetation in this province consists mostly of steppes (FAO and MAF. 2022b). "The Conservation and Sustainable Management of Turkey's Steppe Ecosystems Project" which was implemented between 2017-2022 with the aims of mainstreaming the conservation of Türkiye's steppe biodiversity in production landscapes and strengthening the conservation of steppe ecosystems in three pilot areas in Şanlıurfa is instrumental in highlighting the importance attached to the steppes. The project carried out collaboratively by the Food and Agriculture Organization of the United Nations (FAO) and the Ministry of Agriculture and Forestry General Directorate of Nature Conservation and National Parks (GDNCNP), General Directorate of Plant Production (GDPP), and General Directorate of Forestry (GDF) with the financial support of the Global Environment Facility (GEF) (Yenilmez Arpa, 2022).

Steppe areas represent ecosystems that are very rich in biodiversity and serve as a very important insurance for the conservation of the environment and food security of humanity. At present, the wild relatives of many cultivated species still exist in the steppes. In other words, steppes are important gene centers that contribute to the achievement of food security for the future. Şanlıurfa steppes, as part of the "Fertile Crescent" region, give a summary of the agricultural history of humanity and host a very important cultural and scientific heritage that enables us to re-evaluate the preparatory stages of transition to agriculture (FAO and MAF. 2022b).

Conservation and Sustainable Management of Turkey's Steppe Ecosystems Project aiming at conserving and strengthening Turkey's steppes is one of leading works on steppes. In addition to surveying, planning, monitoring and awareness-raising efforts of the project, which is implemented in three pilot areas in Şanlıurfa, the project also aims at to support conservation of the steppe biodiversity either in protected areas or outside. Karacadag Steppes, unlike the other project demonstration sites, currently has no conservation designation. However, the Karacadag steppes are the gene center of wheat and many legume species, and the last refuge for many other species. Wild relatives of specially cultivated species are still found in the Karacadağ steppes. On the other hand, grazing and livestock farming are the most intense activities in the Karacag steppes. One the one hand, a balance needs to be struck between protecting genetic resources, on the other hand, and supporting sustainable livelihood opportunities.

In line with significance, land ownership and the current land use structure of the Karacadag steppes, it was proposed an alternate in-situ conservation approach except the protected areas. Main outline of three steps which include of the methodology for OECM assessment for Karacadag is summarized based on the original assessment report and briefly given in below tables consequently (Table 2, Table 3 and Table 4 and Table 5) [1].

Table 2. Step1. Screening: Identifying the potential OECM (OECM – Karacadag,, 2022)

Information required	**Site data**
Site name	Karacadag Steppes
Site location:	South-Eastern Anatolia Region, Şanlıurfa Province, Karacadağ Mountain (extinct volcano)
Site designation:	**National:** Proposed Natural Site (50,110 ha). **International**: Karacadağ identified as a Key Biodiversity Area (135,696 ha)
Governance or management of the site:	Governance is subject to a protocol comprising a partnership between the Şanlıurfa Governorship, Ministry of Agriculture and Forestry 3rd Regional Directorate of Nature Conservation and National Parks, Şanlıurfa Regional Directorate of Forestry and Sanliurfa Provincial Directorate of Agriculture and Forestry, who are responsible for implementing and monitoring the *Şanliurfa Steppe Conservation Strategy and Action Plan (*FAO-MAF 2022b). The aforementioned partners collaborate closely with stakeholders to implement the *Karacadağ Steppes Management Plan*
Main biodiversity value(s):	Karacadağ Steppes is located in the Mesopotamium part of Southeastern Anatolia. Karacadağ Steppes is likely to be representative of the following ecosystem types, requiring further assessment of ecosystem threat status once the typology has been applied to Türkiye: **ID** — **Karacadag Steppes: Potential Ecosystem Types** T3.2 — Seasonally dry temperate heath and shrublands T4.4 — Temperate woodlands T7.1 — Annual croplands T7.2 — Sown pastures and fields T7.4 — Urban and industrial ecosystems Biodiversity in Karacadağ Steppes is rich in flora and fauna species, with many recorded for the first-time during surveys undertaken in 2019. Agricultural biodiversity also features prominently in Karacadağ Steppes. Notable is the presence of two wild relatives of modern wheats: wild Emmer (*Triticum dicoccoides*), progenitor of Durum wheat (*Triticum turgidum* ssp. *durum*) and Bread wheat (*T. aestivum*); and wild Einkorn (*Triticum boeoticum*), progenitor of domesticated Einkorn (*T. monococcum*) (FAO-MAF, 2019). Karacadağ is also renowned for its cultivars of rice (*Oryza sativa* L.) that have developed disease, pest and other resilience over centuries of cultivation. Karacadağ Rice has been patented under Türkiye's *Comminique on Official Geographical Indication and Traditional Product Name*" (2018/34); and its traditional production and related practices are proposed for recognition as a Globally Important Agricultural Heritage System (GIAHS). In 2021, a total of 3,352 deciares (3.352 ha) of Karacadağ rice was produced by 11 villages in the Şanlıurfa part of the proposed OECM; and a further 7,838 da were produced by 20 villages in the neighbouring province of Diyarbakir (FAO-MAF, 2022c). (FAO-MAF 2022c) Other wild relatives of grains and legumes include *Aegilops speltoides* var. *ligustica* (white wheatgrass), *Pisum sativum sativum* var. *arvense* (fodder pea), *Lens culinaris orientalis* (wild lentil) and the endemic *Cicer echinospermum* (wild chickpea): all distributed in stony steppes, field edges and forest clearings. In order to support conservation of wild-crop relatives of cultivated species, multi-taxa action plan has been developed in the GEF supported project (FAO-MAF, 2022d).

[1] *The tables have been adapted from OECM assessment for Karacadag steppes, 2022 that was prepared in August 2022.*

Table 3. Step 2. Consent for full assessment (OECM – Karacadag, 2022)

Information required	Site data
Name of the primary governing authority and contact details	Republic of Türkiye Ministry of Agriculture and Forestry, 3rd Regional Directorate of Nature Conservation and National Parks
Name of the management authority(ies)	Şanliurfa Governorship
Name and contact details of any other important rights-holders or stakeholders	Republic of Türkiye Ministry of Agriculture and Forestry, Şanlıurfa Provincial Directorate of Agriculture and Forestry
Record of the consultation process	Meetings which were held to prepare Sanliurfa Steppe Conservation Strategy and Action Plan Meetings and trainings on alternate grazing demonstrations program. Meetings and deeply interviews to draft Karacadag management plan.

Documentation of consent must include any conditions agreed with the parties, such as specific requirements for participation, or review before finalization. Therefore, the Karacadağ Steppes Management Plan is due to be formally endorsed by community representatives (i.e. mukhtars).-village heads) in the knowledge of the site's nomination for OECM status. A copy of the Management Plan, signed off by partners and village mukhtars, will be included with this Site- level tool for identifying OECMs. After completing the requirements in the first two steps, the Karacadağ steppes were subjected to a full assessment in the 3rd step according to the OECM criteria.

The first two steps determined that the Karacadag steppes are likely to have significant biodiversity values. Cooperation and communication were ensured with the relevant authorities, stakeholders and parties regarding the Karacadag steppes becoming OECM. Step 3 focused on verifying all significant biodiversity values based on available information. In addition, the governance and sustainability of the existing biodiversity values of the area and the threats to the area were comprehensively evaluated. The comprehensive evaluation results are summarized in **Table 4** and **Table 5**.

Full assessment includes identification and conservation of the biodiversity values and assessment of sustained and equitable governance and management. After completing the assessment, the result of the assessment, with documentation, has been communicated to the General Directorate of Nature Conservation and National Parks. Documentation of the assessment process and results, including supporting data, have been securely stored for future reference and submitted to the Ministry of Agriculture and Forestry to report through the World Database on OECMs (WD-OECM) by the governing authority.

Table 4. Step 3: The full assessment: recognizing an OECM of Karacadag - identification and conservation of the biodiversity values ((OECM – Karacadag,, 2022**)**

Information required	Site data
Boundary of the site	The boundary of the candidate OECM has been defined based on characterizing the landscape, using such variables as vegetation altitudinal zones, morphology, land cover, land use and visual features. Natural and cultural heritage attributes of the landscape have been assessed, for example its geology, topography, hydrology, climate, biogeography, biodiversity, agrobiodiversity, socio-economy and cultural features including spiritual wildness. Landscape characterization was followed by analyses of its regulating, provisioning, and supporting services; and by a sensitivity analysis that informed its zonation. The Management Plan provides full details. The boundary of the candidate OECM has been mapped using a GIS, considering (includes) sections of three provincial boundaries that determine its eastern border. The boundary has not been demarcated on the ground
Size and configuration:	Candidate Karacadağ Steppes OECM is 60,000 ha. The site's configuration is informed by a GIS analysis of ecosystem services. It is further informed by a landscape sensitivity GIS analysis of current land use/cover. The geographic scope of the vision is holistic, with 9 important biological and agricultural hotspots of diversity identified as core areas totaling 9,807 ha, surrounded by a much larger buffer area of 50,193 ha that comprises a mosaic of traditionally grazed pastures and cultivated areas.

Confirmation of biodiversity values	A wealth of scientific information, including fresh biodiversity and socio-economic survey data and cultural knowledge, has been gathered, collated and analyzed to inform the Karacadağ Steppes Management Plan, as part of the GEF-funded *Conservation and Sustainable Management of Turkey's Steppe Ecosystems Project* (GCP/TUR/061/GFF
Ecosystem services and cultural, spiritual and local economic values:	ecosystem services and cultural, spiritual and local economic values have been assessed, informing the site's configuration and its zonation for conservation management purposes
Threats:	None of the activities outlined in the Karacadağ Steppes Action Plan are intended to threaten the site's biodiversity; rather, a majority of them are designed to directly reduce pressures on and threats to ecosystems, species and crop wild relatives.
Long-term objectives and biodiversity value:	The vision and long-term objective, outlined in the Management Plan for Karacadağ Steppes. The **vision** for Karacadağ Steppes is: *A highly recognizable Karacadağ where biodiversity is protected, especially the genetic resources and geological formations in steppe ecosystems, together with the traditional life and production culture. Sustainable grazing and holistic rural development are ensured and managed by the stakeholders.*
Management actions and biodiversity values:	Management activities focus on: restoring and maintaining the ecological (and cultural) integrity of the entire candidate OECM; protecting biological and genetic diversity within the core zones; sustainably managing pastures in support of native wild plant species and crop wild relatives as well as local livelihoods; sustainably managing agriculture areas in support of local livelihoods; investing in local settlement plans to support livelihoods through improved conservation awareness and best practices in agriculture and animal husbandry; promoting equity and equal opportunities within communities; and monitoring implementation of the Management Plan in order to apply adaptive measures as appropriate

Table 5. Step 3: The full assessment: recognizing an OECM of Karacadag - assessment of sustained and equitable governance and management ((OECM – Karacadag,, 2022)

Information required	Site data
Long-term basis for governance and management	The long-term governance and management of the candidate Karacadağ Steppes OECM is documented in its Management Plan, which will be implemented from 2023 onwards as part of the *Şanlıurfa Steppe Conservation Strategy and Action Plan*.
Equitable governance: involvement of rights-holders	The participation and engagement of local communities in the equitable governance of the candidate OECM is an evolving process. While there has been some consultation with local communities during the management planning process the approach has been top down, exacerbated by limitations and restrictions introduced.

Conclusions and Discussion

Türkiye is party to the CBD and its 2011-2020 Strategic Plan, committing to a vision of living in harmony with nature by 2050 through halting the loss of biodiversity; and ensuring that by 2020 ecosystems are resilient and continue to provide essential services to secure the planet's variety of life and human well-being. Among the 20 ambitious targets set to achieve this vision is Aichi Target 11: to conserve at least 17% of land and inland water and at least 10% of coastal and marine waters through ecologically representative, effectively, and equitably managed, and well-connected systems of PAs and 'other effective area-based conservation measures.' Aichi Target 11 is one of three targets under Strategic Goal C: improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity, while the other two targets relative to the conservation of threatened species (Target 12) and genetic diversity of cultivated plants and farmed or domesticated animals and their wild relatives (Target 13). All these three targets are applicable to Karacadag Steppes (FAO-MAF 2022a).

The Government of Türkiye (GoT) is keen to explore the 'other effective area-based conservation measures' (OECM) model for Karacadağ Steppes, under the provisions of Decision 14/8 adopted by the Conference of the Parties (COP) 14 to the Convention on Biological Diversity (CBD) in November 2018 (CBD, 2018).

The total number of other effective area-based conservation measures (OECMs) in the October 2023 release of the WD-OECM is 870, comprising 734 polygons and 136 points and covering 9

countries and territories (https://www.protectedplanet.net, 2023). For Türkiye, only one case was carried out and an OECM assessment report was prepared for Karacadağ Steppes in the scope of "Conservation and Sustainable Management of the Türkiye's' Steppe Ecosystems Project " that was implemented between 2017-2022 by the FAO and the Ministry of Agriculture and Forestry. It is the first case for Türkiye and introduced the OECM approach to the policy agenda as well.

The 2050 Global Deal and 2030 mission for Nature of CBD is a world of living in harmony with nature where "by 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people.". The mission of the Framework for the period up to 2030, towards the 2050 vision is: To take urgent action to halt and reverse biodiversity loss to put nature on a path to recovery for the benefit of people and planet by conserving and sustainably using biodiversity and by ensuring the fair and equitable sharing of benefits from the use of genetic resources, while providing the necessary means of implementation (https://www.cbd.int/gbf/vision/).

In 2022, the fifteenth meeting of the Conference of the Parties (COP 15) was held in Kunming-Montreal and the Global Biodiversity Framework (GBF) was adopted. Since 1992, hundreds of meetings held and uncountable decisions were agreed. No matter how many decisions are taken to protect biodiversity and natural resources at the global level, it does not seem possible to provide effective protection without reducing or eliminating the human-induced impacts that will reduce these losses. Even the strengthening of protected area systems or alternative in-situ protection tools such as OECM are not strong enough to stop this extinction.

Without doubt, The Global Biodiversity Framework (GBF), which was adopted during the fifteenth meeting of the Conference of the Parties (COP 15) will be the pathway. However, the evidence is unequivocal – nature is being changed and destroyed by us at a rate unprecedented in history. The 2020 global Living Planet Index shows an average 68% fall in populations of mammals, birds, amphibians, reptiles, and fish between 1970 and 2016 (WWF-2020).

The implementation of the Kunming-Montreal Global Biodiversity Framework will be guided and supported through a comprehensive package of decisions also adopted at COP 15

This package includes a monitoring framework for the GBF, an enhanced mechanism for planning, monitoring, reporting, and reviewing implementation, the necessary financial resources for implementation, strategic frameworks for capacity development and technical and scientific cooperation, as well as an agreement on digital sequence information on genetic resources (CBD, 2022b).

As indicated by the Kunming-Montreal Global Biodiversity Framework, all Parties should set national targets to implement it, while all other actors should be compatible to support conservation of nature.

On the other hand, there should be support mechanism to implement of GBF because the full implementation of the framework will require the provision of adequate, predictable and easily accessible financial resources from all sources on a need's basis. In addition, it further requires cooperation and collaboration in building the necessary capacity and transfer of technologies to allow Parties, especially developing country Parties, to fully implement the Framework (CBD, 2022b).

Biodiversity is declining at different rates in different places, still natural resources and biodiversity elements are overconsumed, water and soil are polluted, land and sea use changing including habitat loss and degradation, species are overexploitation, Invasive species and disease are increasing and also effects of climate change.

in 2022, the United Nations General Assembly recognized that everyone, everywhere, has the right to live in a clean, healthy and sustainable environment, meaning that for those in power respecting this is no longer an option but an obligation (WWF, 2022)

All this unconstructiveness experienced at the global level are experienced, perhaps even more intensely, in Türkiye. Although the number of protected areas is relatively increasing today, it cannot be said that management effectiveness has increased. This situation was clearly demonstrated in the study assessing the management effectiveness of Turkey's protected areas, conducted in 2022.

The current protected area system and the inadequacy of the number of protected areas and the shortcomings in management are not sufficient to protect species and values that are rich in biodiversity but also under threat. For this reason, assessments to determine priority areas and species for conservation need to be completed urgently and protected with the necessary conservation

approaches.
According to the 2022 RAPPAM assessment, to increase the management effectiveness of Türkiye's Protected areas need;
- strengthening site management units locally-on-site
- making regulations on the use of protected area revenues
- management planning, participation in planning processes should be brought to the fore and especially implementation plans should be made urgently in a way that focuses on the protection of resources, not on usage.
- elimination of status confusion
- establishment of monitoring and evaluation system
- Paying special attention to improving the economic and social situation of the local people

(Yenilmez Arpa, *et.al,* 2022)
For the development of the **Protected Areas System**;
- Creation of protected areas network
- Strengthening protection legislation
- Elimination in conflict of protection categories
- Elimination of authority confusion
- Establishing an effective monitoring and evaluation system
- Inclusion of unrepresented ecosystems in the existing protected areas system
- Achieving international standards by participating in an international protected area network system
- Ensuring a continuous and innovative perspective in personnel training
- Taking care that managers have an understanding of protection issues and corporate culture (Yenilmez Arpa, *et.al,* 2022).

Major measures need to be taken by everyone, both at the national and international levels. There is a need not only for protection but also for change that will reverse all these negativities.
In- situ conservation efforts such as protected areas and OECMs are main tools to contribute biodiversity conservation and natural resource management together with support food security and sustainable development. However, these efforts need to be increased further.
Although the Karacadag OECM assessment is a first effort in Türkiye, the idea and approach regarding with OECM has taken its place in Türkiye's political agenda and institutional works.
In-situ conservation of biodiversity is "fundamental" to stemming biodiversity loss (CBD, 1992). Protected areas and OECMs are the primary means of achieving in-situ conservation under CBD decisions. Therefore, in order to achive global decisions which have been agreed in the scope of CBD convention site-level tool for identifying other effective area-based conservation measures (OECMs) is very important. This approach can be an important tool for Türkiye as well. One hand, the potential OECM sites can be listed according to the previous baseline study works which have been conducted by the General Directorate of Nature Conservation and National Parks for 81 Provinces, on the other hand, serial trainings and informative meetings/workshops can be arrange on applying of the methodology.

The Karacadag is a one but very important first step to understand of applying the methodology. Decision-makers are key persons to apply the OECM. For this, the technical team who are responsible to follow the CBD behalf of Türkiye, they should take an immediate action to inform for decision-makers. In addition, especially wider participatory meetings by leadership of DKMPGM, should be arranged with participation of academicians, NGOs and also local level government authorities such as Governorship, Municipalities.

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