



ECO Institute of Environmental Science and Technology  
(ECO-IEST)

**Feasibility Study for a project  
to combat desertification  
in the ECO region**  
with a special emphasis on dust haze and sand storm

**March 2017**

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## Preface

1. The Economic Cooperation Organisation (ECO) is an intergovernmental regional organisation established in 1985 by Iran, Pakistan and Turkey as the successor of Regional Cooperation for Development (RCD) (1964-1979) for promoting economic, technical and cultural cooperation. In 1992, ECO was expanded to include seven new members, namely: Islamic Republic of Afghanistan, Republic of Azerbaijan, Republic of Kazakhstan, Kyrgyz Republic, Republic of Tajikistan, Turkmenistan and Republic of Uzbekistan.
2. To facilitate cooperation in the fields of ecology and environmental protection within the region was one of the objectives envisaged in the Treaty of Izmir related to the ECO Directorate of Energy, Minerals and Environment (EME), with focal areas including regional options for climate change mitigation and adaptation; and working with relevant international actors to address shared energy and environmental concerns. The ECO Region Plan of Action on Environmental Cooperation and Global Warming (2011-2015), and associated Project Profile were adopted at the 4th ECO Ministerial Meeting on Environment (Tehran, Iran, 2011)
3. The 23<sup>rd</sup> meeting of the ECO Regional Planning Council (Tehran, 6-8 May 2013) requested the ECO Institute of Environmental Science and Technology (ECO IEST) to cooperate with the Secretariat in preparation of a project proposal to combat desertification in the ECO region, with special emphasis on dust haze and sand storm. The Council also requested all Member States to contribute to the mentioned proposal with their possible technical and financial assistance.
4. In February 2014, ECO-IEST advised the ECO Secretariat (Note 182-2014) of the estimated cost of USD 50,000 to prepare this proposal; of which 25000 USD could be financed by the ECO-IEST, and the rest of this amount would need to be provided by other sources.
5. On 9 July 2014, the ECO Secretariat informed ECO-IEST (Note EME/ENV/IEST/2014/1063) that during bilateral talks between ECO Deputy Secretary General and UNEP officials, UNEP expressed possible interest in assisting ECO to implement this project, and requested the ECO-IEST to make contact with the UNEP.
6. From 15-17 November 2014, in Istanbul, the ECO Senior Officials Meeting deliberated on the proposed Regional Project to Combat Desertification with a Special Emphasis on Dust Haze and Sand Storm. Following a presentation and suggestions by ECO-IEST, the Senior Officials presented their national experiences and discussed issues such as using the United Nations Convention to Combat

Desertification (UNCCD) as a platform for developing an umbrella project for the ECO region; possible funding from the UNCCD funding mechanisms as well as GEF funding mechanism; experience-sharing among Member States; and the need for strengthening regional approaches to combat desertification, including through capacity building and training activities. The Iranian delegation offered to host a training workshop on the issue.

7. On 18 November 2014 the 5<sup>th</sup> ECO Ministerial Meeting on Environment acknowledged the importance of combating desertification in the Member States and the ECO Region as a whole, and requested the ECO Secretariat to allocate USD 50,000 from the Feasibility and General Purpose Fund (FGPF), to develop a project proposal including a detailed needs assessment of the ECO Member States, and design of pertinent training/capacity building programs.
8. In September 2016, after several meetings and mandates received from the ECO governing bodies, an agreement was signed between the ECO Secretariat and the ECO-IEST for the project development phase, which would include i) Establishment of the Project Coordination Unit (PCU); ii) Hiring consultant(s) for development of the Project Draft; iii) Feasibility study and/or needs assessment of the Project by using national status reports of the Member States; iv) Conducting meeting(s) for consideration of the Proposal and Finalization of the Project Draft for submission to donor agencies.
9. The current report presents the Feasibility Study (iii) for the proposed project to combat desertification in the ECO region. The report presents data on the situation of land degradation in the ECO region based on national reports provided by the Member States to the Rio Conventions (UNCCD, UNCBD, UNFCCC); and in particular on the ECO member States' national reports to the CBD and most recent versions of their National Biodiversity Strategies and Action Plans (NBSAP).

## Introduction

10. Land degradation and desertification are significant issues with serious implications in many parts of the world for biodiversity conservation, environmental protection, natural resources management, poverty eradication, socio-economic stability and sustainable development. Land degradation is occurring in different forms across the vast Asian region, including the territories of the ECO member States. Of Asia's total land area of 4.3 billion hectares, 1.7 billion hectares is arid, semi-arid, and dry sub-humid lands. . Desertification, along with climate change and the loss of biodiversity were identified as the greatest challenges to the global environment and sustainable development during the 1992 Rio Earth Summit. Established in 1994, UNCCD is the main international agreement that links the environment, development and the ecologically sustainable use of land and soils. The Convention addresses specifically arid, semi-arid and dry sub-humid areas, termed Drylands, where some of the most vulnerable ecosystems and peoples can be found. In the current 10-Year Strategy of the UNCCD (2008-2018), Parties to the Convention agreed on goals "to forge a global partnership to reverse and prevent desertification/ land degradation, and to mitigate the effects of drought in affected areas in order to support poverty reduction and environmental sustainability". The Convention's Regional Implementation Annex for Asia recognizes the particular conditions prevailing in the region, and calls for activities at the national, sub-regional, and regional levels in the form of coordinated and integrated action programmes.
11. Dry lands are arid, semi-arid and dry sub-humid areas, with diverse habitats including sandy land, forest and woodland, savanna and steppe. In the context of sustainable development the term generally excludes hyper-arid areas (deserts). When drylands become degraded, desert-like conditions can be created. Drylands are characterised by sparse rainfall, periodic drought, wide temperature fluctuations, high evapotranspiration, wind- and water-driven soil erosion, and highly-adapted native plant and animal communities. As drylands become degraded, impacts on the environment and biodiversity, and on people, livestock and agriculture can be severe. In developing or underdeveloped countries, a downward spiral can be triggered, by climate change and prolonged drought; natural land resources and biodiversity are over-exploited, marginally productive lands are over-grazed, productivity is lost, land, soils and groundwater are exhausted.
12. The territories of the ECO Member States encompass extensive dryland areas, which have become degraded at an unprecedented rate during the past few decades, due to increased frequency and severity of droughts combined with problems of land-use, development projects and population growth in several parts of the Region;

land degradation has intensified problems of dust haze and sand storm, and threatens the livelihoods and welfare of millions of people in the region.

13. Land degradation is now one of the most significant issues affecting the economy and livelihoods, peoples' health and well-being, and the environment and biodiversity in each of the ECO member States and across the broad region of Western and Central Asia. The geographic position of the ECO States and their regional neighbours makes them especially vulnerable to land degradation and desertification, because of the prevailing dry climatic conditions, seasonal temperatures and periodic droughts, conditions that are exacerbated by increased variability caused by climate change. The region's extensive dryland zones are locally and nationally valuable for agriculture, grazing, quarrying, fuelwood and other resource extraction, but they are also ecologically fragile, vulnerable to climate change impacts, and at most risk of being degraded by over-intensive or inappropriate land-use practices.
14. The ECO member States have recognised the broad extent and seriousness of the problem and the need to strengthen their responses. Each State has past and current projects that, to varying degrees, have been successful and provide useful lessons for managing the use and conservation of drylands; overall however, these efforts have not been sufficient to halt a downward trend towards desertification.
15. Against this background, the ECO member States have decided to collaborate in a major regional and national initiative aimed at halting and reversing the processes of land degradation and desertification in the 10 Member States. The ECO Institute of Environmental Science and Technology (ECO-IEST) has been requested by its governing Council to design and develop a suitable program. The underlying purpose of the collaborative approach is to generate sufficient synergy through working together to make a significant difference to the ways in which the drylands in their national territories are managed, used and conserved.

## Islamic Republic of Afghanistan

16. According to the Fifth National Report to the United Nation's Convention on Biological Diversity (Submitted on 31 March 2014), the main threats to Afghanistan's biodiversity are conversion of land for agriculture and housing, illegal hunting, deforestation, over-grazing, shrub collection, dryland farming, water diversion, and climate change. These threats have become more serious during the last three decades. For instance, deforestation continues today and it has been estimated that firewood harvest for the Kabul market alone results in the destruction of 10,000 ha of oak forest and 15,000 ha of juniper forest each year in Paktia and Khost Provinces. Illegal export of timber to neighbouring countries is significant, but unquantifiable because of security and access challenges. According to national experts, catastrophic landslides, rockslides, mudslides, floods and flash floods associated with spring rains combined with snowmelt, and less protective land cover have become increasingly common during the last fifty years. Water schemes and regular droughts are impacting wetlands and rivers with unmeasured effects on aquatic biodiversity. Desertification in Afghanistan already affects more than 75% of the total land area in the northern, western and southern regions as a result of grazing and deforestation and possibly climate change.
17. Afghanistan is essentially semi-arid to desert, 8,000 km<sup>2</sup> of land was degraded between 1981 and 2003. Desertification in Afghanistan already affects more than 75% of the total land area in northern, western and southern regions where widespread grazing and deforestation have reduced vegetation cover and catalysed/accelerated major deserts. Afghanistan has two basic forest types: (i) closed forest of oak and conifer in the monsoon-influenced areas of eastern Afghanistan and savannah-like and (ii) open pistachio woodlands originally located in an arc around the mountain regions. Closed forests (not including northern juniper communities) may have covered about 5% of the country or about 34,000 km<sup>2</sup>. There were about 3,600 km<sup>2</sup> of closed canopy forest remaining in the late 1970s; meaning approximately 11% of pristine forest covered then.
18. A model reported by Savage et al. (2008) indicates that by 2030, mean annual temperatures are likely to rise about 1.4°C with little change in overall precipitation. By 2090, increases in average temperature are likely to be between 2-6°C higher, dependent upon global emissions scenarios. Conditions will become drier, especially in spring, with reductions in rainfall of between 10-40 mm and with drier conditions in the south. Most of the remainder of the country is already classified as desert. According to the 2006 National Report of the Ministry of Agriculture, Irrigation and Livestock (MAIL), desertification in Afghanistan already affects more than 75% of the total land area in northern, western and southern regions where widespread grazing and deforestation have reduced vegetation cover and catalysed accelerated land

degradation. Savage et al. (2008) predict that Afghanistan will be confronted by a range of increased climatic hazards. These are likely to be primarily drought related and associated with increased desertification and land degradation. Drought is likely to be regarded as the norm by 2030, rather than as a temporary or cyclical event. They suggest that flood impacts will likely be amplified by more rapid spring snow melt combined with greater runoff associated with land degradation, loss of vegetative cover and land mismanagement. Increased soil evaporation, reduced river flow from earlier snow melt, and less frequent rain during peak cultivation seasons will all impact agricultural productivity and crop choice availability. Crop failures will probably increase in frequency and areas of abandoned, uncultivated land will likely increase. Crop choices will shift to more drought hardy species and by 2060 agriculture will likely become marginal, without significant investment in water management and irrigation (Savage et al., 2008). Climate change might have a significant negative impact on the urban and rural livelihoods of all citizens.

19. The geological, topographic and climatic features of Afghanistan naturally increase the country's susceptibility to the processes of soil erosion, however human activities can significantly exacerbate them through farming of steep slopes, deforestation and de-vegetation of lands, and unsustainable use of scrub and grasslands. Such activities can lead to desertification and increased floods. Soil erosion is a prominent issue in the Koh-e Baba Mountains. Overgrazing, unsustainable methods of shrub collection and rainfed farming on steep slopes have resulted in high levels of soil erosion. Rainfed farming is especially detrimental to soil retention but is practiced because of the low availability of irrigated land. In many villages, farmers are forced to annually bring large amounts of topsoil from distant areas. Preserving the natural vegetation on the slopes would prevent soil erosion and enhance the productivity of the land that provides the main source of livelihoods (UNEP 2012).

#### **Biodiversity Targets set by Afghanistan**

Strategy 7.1 to control impacts on biodiversity resources resulting from climate change, desertification and pollution

#### **National Targets in the NBSAP:**

Target 5: By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced;

Target 7: To control impacts on biodiversity resources resulting from climate change, desertification and pollution;

Target 8: To develop and implement mechanisms and plans for maintaining goods and services obtained from critical ecosystems, focusing on forests and woodlands.

## Republic of Azerbaijan

20. According to the Fifth National Report to the United Nation's Convention on Biological Diversity (submitted on 30 March 2014), the Republic of Azerbaijan is situated at the juncture of several bio-geographical areas - the Eastern Palearctic, Turan, the Mediterranean, Asia Minor, and the Middle East - and contains species of European, Central Asian and Mediterranean origin. The country forms an integral part of the Caucasus Ecoregion, a region with exceptional levels of biodiversity. Azerbaijan also shares the largest inland body of water in the world, the Caspian Sea, with four other countries (Russia, Iran, Turkmenistan and Kazakhstan). The biological diversity of the Caspian Sea and its coastal zone makes the region particularly significant.
21. Key environment issues concern threats related to climate change, air quality, water quality, waste management, nature protection, coastal and marine pollution, air quality, water quality, waste management, nature protection and land use (in particular desertification) shows progress in Azerbaijan. While administrative structures on land degradation are in place, a major challenge is to strengthen administrative implementation capacity at all levels of the country, including coordination between authorities. There are some ongoing activities to integrate environment considerations into other policy sectors.
22. Agriculture, forestry, fishery and hunting products totally accounted for 1072.6 million manats in 2000 and 3324.8 million manats in 2008. The overall land area of the country is 8.6 million hectares, of which 55% is considered fit for cultivation. Cattle breeding, poultry farming, forestry, fishery and hunting are all well developed in the country. Only 49.3% of the total 8.6 million hectares of the country's land are suitable for agriculture. Soil degradation has assumed a large magnitude on these lands as a result of erosion, salinity, bogging, chemical pollution, etc. Erosion from wind, water, gullies and irrigation has affected 3.7 million hectares, of which 0.7 million are intended for agriculture. 1.2 million hectares are affected by salinity, of which over 600 thousand are irrigated lands. About 300 km<sup>2</sup> of land area is affected by floods. Flooding in the Greater Caucasus chain every other year washes out as much as 1 million m<sup>3</sup> of soil and causes great damage to nature. Only about 11 percent of Azerbaijan's territory is covered in forest, which is about half of the normal standard in world forestry practice.
23. Azerbaijan can be divided into the following five broad ecosystem complexes, all of which contribute to the high levels of biodiversity represented in the country:
- Forest ecosystems;

- Freshwater, wetland and swamp ecosystems;
- Grassland and semi-desert ecosystems;
- High mountain ecosystems;
- Marine and coastal ecosystems.

24. Some of the related main threats to biodiversity in the country include:

- Land degradation: extensive salinization; widespread soil erosion; weak regulation of building and construction activities; and pervasive use of fertilizers, pesticides, and herbicides;
- Habitat fragmentation: harvesting of timber; conversion of grasslands for agriculture; damming of rivers; expanding the network of irrigation channels in steppe ecosystems; and outbreak of wildfire;
- Unsustainable levels of natural resource use: overgrazing in grasslands and semi-arid areas.

25. Extensive areas of Azerbaijan are being severely impacted by soil erosion and salinization. It is estimated that 3.6 m ha (ca. 42% of the territory of Azerbaijan) is subject to the damaging effects of erosion, while 0.6 m ha (ca. 7% of the territory of Azerbaijan) is adversely affected by salinization, to the extent that it is now no longer suitable for agriculture. The salinization and erosion of soils tend to be a result of poor irrigation and drainage systems, overstocking of livestock, unsustainable levels of ground water extraction and ongoing deforestation.

#### **Progress towards the Aichi targets and CBD Strategic Plan**

Target 15: By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15% of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.

#### **National Targets in the NBSAP:**

Azerbaijan doesn't have a national communication strategy addressing land degradation synergies with climate change and biodiversity in place. Sustainable use of genetic resources; conservation of biodiversity and transfer to future generation; poverty alleviation; maintenance of ecological balance; ensuring transition to a "green economy"; promotion of environmental education; restoration of endemic and local fauna species; development of the protected areas network; and reducing the threats to biodiversity; are suggested strategies for Azerbaijan.

## Islamic Republic of Iran

26. The Islamic Republic of Iran covers 164.8 million hectares situated where three climatic zones meet the Mediterranean, the arid West Asian and the temperate humid/semi-humid Caspian zone. The country is both a meeting point for many cultures as well as for many types of climate, land, water and biodiversity.
27. Of the total land area, about 52.4% are rangelands; 8.6% are forests and 19.5% are deserts including bare salty lands. Being dominantly in an arid environmental zone, approximately 85% of Iran's agricultural lands are located in arid and semi-arid areas. Iran's location and geographic features thus cause the country to receive an annual rainfall of 240 mm, less than a third of world average precipitation. However, annual precipitation in the inland dry deserts of the country can be as low as only 10 mm. As a result, most rivers are seasonal and their flows depend heavily upon the amount of rainfall.
28. The country features three main climatic zones including (i) arid and semi-arid regions of the interior and far south (which is characterized by long, warm and dry periods) sometimes lasting over seven months, and covering nearly 85% of the country. The annual precipitation rate in such regions varies between 30 and 250 mm,(ii) Mediterranean climate (mainly in the western Zagros mountains, the high plateau of Azerbaijan provinces, and the Alborz mountains) and (iii) humid and semi-humid regions (mainly in the Caspian, but also in west Azerbaijan province and the southwest Zagros). In addition Iran's plateau with a vast desert located in the central areas, and two mountain ranges, Zagros in the west and Alborz in the north, comprise a significant portion of its territory.
29. Although much of Iran is extremely dry, the wetlands of Iran are globally significant; large populations of migratory birds winter at these wetlands or use them on their way to and from wintering areas in Africa or the Indian sub-continent. The country possesses a great diversity of wetland ecosystems, most of which can be grouped into six major systems. Also except for the interior deserts and the lowlands along the Caspian Sea, Persian Gulf and Gulf of Oman, half of Iran is composed of high mountains.
30. Based on scientific estimates, 1% of the total area in Iran is annually degraded to desert land. Frequent drought cycles and unsustainable methods of use of soil, water, and plant cover have aggravated the desertification process in Iran. The net result is the lack of opportunity for the vegetation to develop resulting in reduced biological productivity of agricultural lands and natural vegetation. Iran has taken several measures to promote the conservation and sustainable use of the biological

diversity of dry and sub-humid lands. A national action plan to combat the loss of biological diversity in such areas has been implemented. The most important measures in this action plan are as follows:

- Strengthening the cooperation among relevant national organisations.;
- Promoting the Involvement of all stakeholders in undertaking planned activities;
- Raising public awareness and participation, especially affected populations;
- Providing required financial resources to provincial, sectoral and local levels;
- Building capacities of local communities and relevant administrative bodies.

31. Drought has frequently happened as a natural disaster in wide areas of the world. Iran has experienced prolonged drought for several years. During these years, the amount of rainfall was even lower than 50% of the average annual rainfall in the country. The drought that happened in 1998-1999 was the most severe drought in 30 years and influenced all parts of the country. In this period, the rainfall was about 26% lower than average rainfall in 30 years. The great droughts have negative impact on various sectors in the country such as water resources, agriculture, forests and rangelands, soil fertility, livestock and deserts. Droughts also affected industries, society, national economy and government budget. Periodical droughts are new to Iran, because of its geographical and natural conditions. However, recent evidences indicate that dry periods are increasing in frequency, time period and intensity. Therefore, this important fact cannot be overlooked in related decision making processes for the future of the country.

32. Due to Iran's geographical situation and topographical features, about 80% of Iran's total area have arid or semiarid climate. Even though, there is a variation in reports on quantity of deserts areas in Iran, because of different definitions; some real estimations showed that, at the present the area of desert regions and sandy lands is estimated to be 34 million hectares (5 million ha active and 12 million inactive sands and remain areas is salt accumulation lands, saline and alkaline soils, gravelly lands, etc.), and that of the poor and desertified rangelands which is 16 million, it reaches to 50 million hectares.

33. There is a great integrated survey to definition and mapping Iranian deserts, for getting actual numbers. However, after more than 40 years of executive programs and 3 decades of research activities for solving desert problems, a large quantity of reclaimed desertic area has been ready for life of human communities. The most important finding is to rational management of water; especially utilisation of flood flows in arid regions is the key for solving the problems. Furthermore, involving and

sharing the benefit with the local people (who are the actual owners of the lands), is one of the successful ways to sustainable rehabilitation of deserts.

34. On the other hand, in arid and semi-arid areas nomadic pastoralists are often seen as being in direct competition with threatened species including the rare Asiatic Cheetah. Nomads are frequently seen as major threats to biodiversity. The expansion of agriculture into arid and semi-arid lands is possibly a much greater threat and has, in any case pushed nomads and their livestock into smaller areas. There have been promising efforts to develop collaborative management approaches which may help to resolve some of the conflicts and which involve nomads in the conservation process, building on local and traditional knowledge. Collaborative management of the Asiatic Cheetah, while controversial, is an important initiative in this area.

**National Targets in the NBSAP:**

Target 9: By 2030, the rate of loss of natural habitats, in particular forests, wetlands, mountains and dry lands is at least halved, and degradation and fragmentation is significantly reduced.

Target 13: By 2020, effective measures to reduce climate change impact on biodiversity are developed and by 2018, an appropriate mechanism is in place.

Target 16: By 2025, preservation, restoration and sustainable use of terrestrial and inland water ecosystems are ensured.

Target 19: By 2030, at least 20% of terrestrial and inland water ecosystems, and 5% of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are protected.

Target 20: By 2025, sustainable forest management plans are developed and implemented across the forest zone of Iran, the rate of deforestation significantly reduced and at least 20% of degraded forests are rehabilitated.

Target 23: By 2030, financial resources from all sources to conserve and sustainably use of biodiversity are mobilized and significantly increased.

Target 18: By 2030, conservation and wise use of wetlands is strengthened and the situation of at least 50% of degraded wetlands are improved.

Target 20: By 2025, sustainable forest management plans are developed and implemented across forest zones in Iran, the rate of deforestation is significantly reduced and at least 20% of degraded forests are rehabilitated.

Target 21: By 2025, sustainable rangeland management is developed and implemented.

Target 23: By 2030, financial resources from all sources to conserve and sustainably use of biodiversity are mobilized and significantly increased.

Target 24: By 2025, environmental diplomacy, bilateral and multilateral cooperation in the context of biodiversity at regional and international levels is promoted.

## Republic of Kazakhstan

35. Kazakhstan is the 9th largest country in the world with an area of 2.72 million km<sup>2</sup>. The country enjoys the unique set of landscapes, ranging from deserts to high mountains and ecosystems of inland seas. Moreover, arid and sub-humid lands cover more than 75 % of the area of the Republic of Kazakhstan.
36. Kazakhstan, due to its unique combination of natural complexes of steppes, deserts, mountains, major inland waters with rivers draining into them and the vast deltas, has a great diversity of ecosystems and relevant types of flora. There is a full range of subzonal options of steppe vegetation, deserts and mountain zones, typical for central Eurasia, in Kazakhstan.
37. The flora of Kazakhstan integrates more than 13 thousand species, including - more than 5750 species of vascular plants, about 5000 - fungi, 485 - lichens, more than 2000 - algae, about 500 - bryophytes. Centres of endemism of the flora (the Karatau mountains, the Western Tien Shan) and a number of unique natural complexes and communities, which are original in their floristic composition, are located in Kazakhstan. The country has a full range of subzonal vegetation of steppes, deserts and mountain belts, typical for the Central Eurasia.
38. The State Forest Fund (SFF) of RK as of 1 January 2013 covers 28,787.7 thousand hectares or 10.6% of the country area. The lands covered with forests amount to 12,548.6 thousand hectares or 43.6% of the total land area of SFF, the percent of the forest cover is 4.61%.
39. After years of economic downturn that followed the collapse of the Soviet Union in the past 10 years the economic growth, along with increasing pressure on ecosystems, is quite sustainable. In the recent 5 years anthropogenic effects, including pollution, particularly visible in mining regions, recirculation of deposits and development of agriculture, as well as in the areas of mass recreation emerged with the improved wealth of population, are becoming more intensive. Moreover, the following effects are still in place: the local rangeland degradation, depletion of plant resources resulted from primitive harvesting, maintained by local population, and existed for many years - as a result of various influences - violations in ecosystems of entire regions.
40. Processes of desertification intensified in the conditions of the climate change are still underway. Total changes in ecosystems in Kazakhstan occurred more than 50 years ago as a result of extensive ploughing up of steppe and forest-steppe zones. The degree of ploughing up of grassland steppes in plains reaches 90%, in hummocks - up to 30 %. Dry steppes were plowed up by 50- 60 %, and in hummocks- by 10-15%. Other types of landscapes, suitable for grazing, demonstrate rapidly degrading of pastures. After the collapse of the USSR and the economic collapse in the 1990s,

ecosystems in grasslands and abandoned pastures naturally started restoring. In the last 5 years, on the one hand, ecosystems continued to be naturally recovering, on the other hand, previously abandoned areas were back for the economic use. With the growth of livestock there was a growing overgrazing near settlements. According to data for 2013, 15% of agricultural lands are not used efficiently, about 125 million hectares of pastures are not watered and abandoned, more than 20 million hectares of pastures adjacent to settlements, are classified as degraded.

41. As a result of inadequate regulation, 5.6 million hectares of arable lands in the northern and central Kazakhstan suffer from water erosion and the crop yields reduced by 20-30%; in 9 out of 14 regions of Kazakhstan degraded agricultural lands, including pastures, constitute 30-50 % and higher. Salinization, water and wind erosion, reduction of humus, secondary salinization with water discharge after irrigation occur in more than 90 % of the arable soils of the country. Ineffective use of lands, whilst grazing and livestock breeding is compounded now with creation of numerous small agro and livestock units that do not have sufficient resources for complete administration of areas.
42. Currently, problems in land use for livestock and grazing farming became more obvious as a result of numerous small agro and livestock units, which are unable to ensure cost-effective use, purchase of machinery, fertilizers, veterinary services for livestock transhumance, provide reserves of fodder, processing of agricultural products. This leads to socio-economic problems associated with reorientation of farms. Under these conditions, adequate natural areas are used more randomly, without observing norms of withdrawal of resources, i.e. the degree of their degradation and desertification is intensified.
43. The map of ecological risk zones of Kazakhstan shows quite a complicated and diverse picture of ecosystem degradation in terms of the degree of hazards and risk of loss of species, ecosystems, the degree of internal danger of desertification of ecosystems, their soil cover under intensive anthropogenic impact. In general, based on the analysis of the map of ecological zoning, five degrees of danger were identified, in principle, relevant to the degree of desertification - land degradation, ecosystems and, especially, the land cover.
44. According to the assessments, about 75% of the area of the country is exposed to a high risk of environmental destabilization. Depletion of biodiversity and signs of ecosystem degradation are specified in about two-thirds of the area of the country, especially in deserts and steppes.

#### **National Targets in the NBSAP:**

Target 4. By 2020, Governments, businesses and stakeholders at all levels will have implemented plans to achieve sustainable production and consumption, preventing destructive impacts of using natural resources on environmental sustainability.

Target 5. By 2020, the pace of loss of all natural habitats, including forests, is decreased at least by half and where feasible, are brought close to zero, and degradation and fragmentation are significantly reduced.

Target 7. By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.

Target 11. By 2020, at least 17 per cent of terrestrial and inland water, 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 landscapes and seascapes.

Target 15. By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.

Target 18. By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.

## Kyrgyz Republic

45. Kyrgyz situated in the centre of Eurasia with area of 199.9 thousand km<sup>2</sup> and has general borders with Kazakhstan, China, Uzbekistan and Tajikistan.<sup>1</sup> Kyrgyz is surrounded by arid and extra arid plains of Central Asia, whose environment experiences hard influence of desert area that stretches in eastern hemisphere from Sahara till Gobi. Distance from nearest ocean (about 3,000 km) determines general aridity and continentality of climate.
46. Rivers applies to closed Central Asian basins: Aral, Tarim, Issyk-Kul and Balhash. General annual flow makes up about 50 thousand km<sup>3</sup>, and altitude amplitude from 500 until 7134 m above sea level. From north and south they border with large deserts.
47. There are 20 classes of ecosystems marked out in Kyrgyz Republic, one of which is anthropogenic. Compound high altitude relief of Kyrgyz situated in southern part of temperate zone creates favourable conditions for existence of all main types of natural ecosystems, starting from deserts and finishing with high altitude mountainous tundra.
48. The greatest amount of threatened species are found in desert and steppe ecosystems of Kyrgyz, which are exposed to the most destructive anthropogenic influence mainly related to displacement with cultivated lands, pasture digression, poaching, especially in foot-hill zone and lower mountain belts. Pasture grass ecosystems (meadow, steppe, savanna and desert) are inhabited by 233 species already recorded into Red book, whereas in general 64 species fall on forest and dumetous ecosystems and 35 on water-paludal ecosystems. From the other hand, relative to territory the concentration of species indicated in Red book is high in all ecosystems, which tells about theirs general troubles and necessity of theirs restoration.
49. Noticeable presence of desert (over 13 thousand km<sup>2</sup> or 6.8% of territory) together with utterly poor ecosystems of nival-subnival belt (11.5 thousands km<sup>2</sup> or 5.8% of territory) indicates rather tough living conditions on significant territory of the country (12.6%).
50. There is no single ecosystem that would not experience the impact of human being in a certain extent left on the territory of the country. It had its effect on theirs

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<sup>1</sup> Atlas of Kyrgyz SSR. Nature conditions and recourses – State Administration of Geodesy and Cartography.– T.1.–1987.

condition: conservation of area, changing of species compositions, changing in correlation of number of species.

51. Sub mountain low steppes, tugai and water-paludal complexes in Chui valley, dry steppe, semidesert and desert ecosystems in adjoining Fergana zone are practically extinct. Due to high pollution and full drawoff for irrigation ecosystems of lower reach rivers become degraded. Ichthyofauna in mostly all water basins has been changed as a result of acclimatization of 21 alien species of fish out of 54. Steppe, desert and semidesert ecosystems of submountain plains and intermountain valleys, streamside arboreal and dumetous vegetation exposed to strong postural demolition. This process has been intensified close to centres of population at the time of transfer of cattle into the private ownership. Small owners turned from distant-nomadic to primitive pastoral cattle-raising.
52. All forest ecosystems where cattle grazing and deforestation is still continuing are in the extremely miserable condition. Their territory has been decreased twice in last 50 years. Decision about deforestation of overripe trees in spruce forests evokes anxiety, as it may bring to irreversible loss of their full-aged structure and further degradation. Out of the forest ecosystems main importance belongs to nut-forests as they are the source of income for the forestry and part of population by harvest of walnuts, wild fruits and berries.
53. In accordance with scenarios of climate change, developed on the territory of Kyrgyz significant removal of borders of natural zones of expansion desert and steppe ecosystems, including steppification of meadow ecosystem will take place. Catastrophic changes of species composition of biota will not occur. Increasing of temperature will be smoothed by increasing of humidity and mountain relief. Most of plants, and dominants have wide ecological areal and in the process of evolution they will adapt to life under minimal atmosphere humidity and temperature contrasts.
54. In 1997 Kyrgyz Republic joined the UN Convention to Combat Desertification (UNCCD), with the aim to implement the Convention under Institute of Irrigation of MAWRPI the national Centre on Combat Desertification was established, at the same time the Centre is an executive body on fulfilment of National Action Plan on Combat Desertification. In the framework of the Centre pilot projects on land degradation are implemented.
55. With the aim to conserve land and water resources, Kyrgyzstan joined to Central Asian Countries Initiative on Sustainable Land Management (CACILM), it represents an innovative international cooperation of donors to support development and fulfilment of National Framework Programme (NFP). NFP is an important document aimed at fight with land degradation and sustainable natural resources management

in the country, including biodiversity conservation. State agencies, public organisations, donors, local communities and civil society participate in NRP.

**National Targets in the NBSAP:**

Target 5: conservation and sustainable use of forest resource, and the annual increase of forest area.

Target 12: conservation and restoration of the most important of flora and fauna, ecosystems and landscapes to a state of sustainable natural reproduction. Expansion of specially protected natural areas.

## Islamic Republic of Pakistan

56. The ecosystems of Pakistan range from coastline in the south to the mountain ranges of the Himalayas and Hindu Kush in the north along with deserts and plains. Of the total land area, only 34.9 percent is utilised for cultivation. Forests form only 2.4 percent, and the remaining 62.7 percent area comprises desert, dry mountains and degraded uplands in moist and temperate biomes. Over 60 percent of population is rural and to some degree depends on nature and natural resources for their daily subsistence needs – forage, fuel etc. Under growing population and increasing anthropogenic pressure, the ecosystems are heavily strained and are thus degrading. The rangelands which cover the bulk of the landmass, sustain a growing livestock industry. All these ecosystems have played a crucial role in providing the platform for economic development and growth. The coastal zones of Sindh and Balochistan are highly productive ecosystems, with over 1000 species of marine fish and a thriving shrimp industry.
57. The forests are a valuable source of timber and provide vital ecological services that protect watersheds and maintain soil productivity. Despite the economic significance of these assets, there is no reliable baseline information to guide effective policy making. The only component of biodiversity whose value is well documented is trade in medicinal and aromatic plants (MAP). A market survey of medicinal plants in the year 2000, reported that Pakistan was the eighth leading country exporting MAPs with an estimated export volume of 8500 tons valued at US\$5.45 million per annum. A 2007 World Bank report estimates a loss of seven billion rupees as a consequence of rangeland degradation and deforestation. The estimates of loss of fisheries and coastal zone degradation are not available.
58. The climate varies from tropical to temperate. Arid conditions exist in the coastal south, characterized by a monsoon season with adequate rainfall and a dry season with lesser rainfall, while abundant rainfall is experienced by the province of Punjab, and wide variations between extremes of temperature at given locations. Rainfall varies from as little as less than 10 inches a year to over 150 inches a year, in various parts of the country.
59. Deserts, in Pakistan, make up a large part of the country's geography, especially in the central and south-eastern regions. The major deserts are:
- Indus Valley Desert: is located in the northern area of Pakistan. The desert spans an area of 19,500 km<sup>2</sup> and is surrounded by northwestern scrub forests. It lies between two major rivers in the region, the Chenab and the Indus.

- Kharan Desert: is located in northeast Balochistan. The desert was used for nuclear testing by the Pakistan military, making it the most famous of the five deserts. It is in the center of a large empty basin. It estimated area of more than 20,000 km<sup>2</sup>.
- Thal Desert: is located in Bhakkar district of Pakistan between the Indus and Jhelum rivers.
- Thar Desert: The Thar desert spans an area of 175,000 km<sup>2</sup> and covers large areas of Pakistan and India.
- The Cholistan desert spans an area of 16,000 km<sup>2</sup>. The name "Cholistan" is derived from the Turkish word "chol," meaning "desert," though the desert is locally known as Rohi.

60. Grazing in alpine and subalpine pastures is not regulated under law, however, in some regions, local communities have traditional management practices of regulating grazing season and rotational grazing. There is no data on the health and condition of these pastures. Most of the natural forests in this biome have either been cleared for farming or are heavily degraded due to deforestation, over grazing, and faulty agricultural practices. Another leading cause of loss of biodiversity is fragmentation of habitat due to expanding human settlements and infrastructure development. The political demand to connect the scattered settlements by road has led to the construction of a large road network, without any measures for slope stabilization, which has triggered numerous small and large landslides. Natural forests that are under government management are still surviving, but are generally burdened with right and heavy dependence of communities for fuel wood. As a result these forests are fast degrading due to increasing anthropogenic pressure. Once the area is deforested, it will not regenerate naturally due to heavy grazing pressure. The arid rangeland biomes are highly degraded due to overgrazing, uprooting of woody vegetation for fuel, and in some cases clearing of land for seasonal cultivation.

**National Targets in the NBSAP:**

Target 5: FAO reports and local independent studies report significant loss in forest cover (assessment of changes is not for long term). Government reports that forest cover including farm trees equal 5.01%. Increase in timber and fire wood production (assessment of changes is for long term).

Target 7: Agriculture lands primarily managed for commercial or subsistence agriculture without any consideration for the conservation of biodiversity (assessment of changes is for long term). Forests are generally managed in a sustainable manner but gradually being degraded to anthropogenic pressure (national targets have not been set yet).

Target 15: Pakistan is in the process of building capacity of REDD+. So far no major efforts have been made to enhance carbon stock through conservation and restoration of natural forests. There is greater awareness to enhance carbon stocks in forests and projects are in pipe for REDD+ readiness.

## Republic of Tajikistan

61. Tajikistan can be viewed as a specific model of the planet, since on its relevantly small territory there can be seen almost all climatic zones with the range of temperatures from +50°C to -60°C. Country's climate is arid with no lack of warmth and significant fluctuations of its annual parameters. The absolute minimum of the atmospherical temperature of -63°C was recorded in Eastern Pamir, and the absolute maximum of +47°C was recorded in the south of the country. Average annual rainfalls are 760 mm. In high-mountainous deserts of the Eastern Pamir there is just 70-160 mm of rainfalls, and in the central Tajikistan rainfalls can exceed 1800 mm per year.
62. Tajikistan is a mountainous and mostly agricultural country. Around 4600 thousands of ha of land including natural pastures are located in agricultural ecosystems. All intermountain areas of Tajikistan under 2500 m above sea level are used for agricultural purposes. Desert, semidesert low-hill terrains and major river-valleys are largely cultivated and are impacted with anthropogenic changes. These are the areas of concentration of annual crops, melon-growing, vegetable farming, farming of cereal and industrial crops. Animal breeding develops on the basis of natural pastures of mountainous ecosystems.
63. In terms of natural and climatic features Tajikistan is situated on the border between temperate and subtropical climatic zones. Specific features of the climate are high-solar intensity, low cloudiness, long duration of solar radiance, aridness, wide fluctuations of daily and seasonal temperature variations. Natural landscapes of Tajikistan are very diverse and are composed of ridge and valley geographical units. Wide valleys and plats in low-hill terrain (up to 1000 m above sea level) are notable for hot and prolonged summer with average atmospheric temperature of around 30°C in July, and with absolute maximum of 43-48°C. From July to September there are almost no precipitations. Winter is short and mild. Annual amount of precipitations equals to 300-600 mm which mainly fallout during winter and early spring.
64. Around 70% of Tajikistan's territory refers to ecosystems which have not been subjected to significant economic impacts and are relatively unbroken. About 20% of the territory has experienced significant impact on its ecosystems and preserved its capacity necessary for compensation of anthropogenic impacts. Around 10% of the territory are populated with 2/3 of the total population and can be described with high degree of anthropogenic impact on natural ecosystems. Because of increase of economic activities in recent years transformation of natural ecosystems has tendency to expand, processed of erosion and land degradation grow.

65. In environmental aspect biodiversity of Tajikistan's mountains, mainly forest resources and shrubby communities, performs soil-protective and water-regulative functions. Economic stability of the population both in mountains and in lower belts depends on the status of balance of biodiversity in mountains, inter-mountain areas and valley ecosystems. Such inter-connection from one side is caused by direct use of biodiversity by seasons and from the other side by sustainable maintenance of environmental balance in mountain-valley territories.
66. The total area of natural grasslands of Tajikistan equals to 3877.7 thousand ha, of which 3856.2 thousand ha (99.44%) are native pastures and 21.3 thousand ha are hayfields. Additionally, there are 32.1 thousand ha of wild lands which are mainly used by population as forage resources for keeping more than 8 million of dual purpose cattle and wool livestock. These are located in all four regions of the republic (six administrative-territorial zones). Areas by administrative territorial and natural zones significantly vary.
67. Tajikistan is actively involved in a number of activities on the regional level, particularly, with other Central Asian countries of the former Soviet Union. Over the past ten years these countries have developed series of joint activities on environmental conservation including preservation of biodiversity.
68. The main environmental cross-border issues which require cooperation are degradation of lands and pastures, severe salinization, decrease of forest areas, ablation of shores of cross-border rivers, natural disasters in cross-border areas, and pollution of soils of minor rivers.
69. In order to resolve these issues it was planned to develop joint environmental conservation projects on utilisation of water resources, and preservation of biodiversity, prevention of ablation of river shores, degradation of lands, forests and glaciers, on desertification, natural disasters and many other types of issues.
70. In 2007 the capacity of cooperation between Afghanistan and Tajikistan was supported by Kyrgyz and Turkmenistan where there were also conducted inter-state workshops with partners from the entire region. The main priorities of the agreements on the regional cooperation were sources of pollution of cross-border rivers and sites, loss of biodiversity, climate change and natural disasters (drought, desertification).

**National Targets in the NBSAP:**

Target 5: Introduction of incentive mechanisms in preservation zones of natural habitats of biodiversity, particularly, genetic resources and especially valuable species for the purposes of food security, medicine and selective breeding.

Target 8: By 2020, at the latest, to identify and conduct inventory of aquatic ecosystems of

Tajikistan by geographic zones and natural belts, to conduct assessment of the level of their vulnerability, and to adopt measures on reduction of the level of biogenic substances for safe state of biodiversity.

Target 12: By 2020 to conduct full inventory, cartography and conditioning of habitats of and sites of rare species of biodiversity which are under the threat of extinction, and to develop mechanisms of rehabilitation and prevention of the threat of reduction of species and populations, to define the status of their preservation and use.

Target 14: By 2020 to specify representative of the ecosystems included into the list of SPNAs; to conduct assessment of ecosystems by the level of vulnerability for the ecosystem.

Target 15: By 2020 to improve resistance of the ecosystems and to increase the input of biodiversity into accumulation of carbon through preservation and regeneration of valuable natural mountainous ecosystems, rehabilitation of restructured ecosystems by at least 15% which will promote mitigation of consequences of climate change and adaptation of biodiversity and combating desertification.

## Republic of Turkey

71. Turkey is one of the fortunate countries in the world which possesses vital resources for food security and thus has the responsibility to protect and use this important wealth rationally for the welfare of future generations. It has three biogeographical regions called Euro-Siberian, Mediterranean and Irano-Turanian and their transition zones and because its climatic and geographical features change within short intervals of space due to its position as a bridge between two continents, Turkey has acquired the character of a small continent from the point of biological diversity.
72. Turkey has forest, mountain, steppe, wetland, coastal and marine ecosystems and different forms and combinations of these systems. This extraordinary ecosystem and habitat diversity has produced considerable species diversity. It should be also noted that fauna biological diversity is quite high in Turkey compared with the biological diversity of other countries in the temperate zone.
73. The total surface area of Turkey is 780,576 km<sup>2</sup>, of which 10,000 km<sup>2</sup> is formed by rivers and lakes. Turkey is surrounded on the north by the Northern Anatolia Mountains which run parallel to the Black Sea coast, on the northwest by the Yildiz Mountains, on the south by the Taurus Mountains parallel to the Mediterranean coast, and on the west by the Western Anatolia Mountains perpendicular to Aegean Sea Coast.
74. Turkey has 33 rivers, 200 natural lakes, 159 dam reservoirs and 750 artificial lakes, which constitute its inland waters.
75. Turkey's highly varied topography is one of the main causes of its climatic diversity. In the Mediterranean climate which prevails in the southern and western parts of the country, summers are hot and dry, winters are mild and rainy. In the Black Sea climate dominant northern part, there is rainfall in every season; summers are not very hot just as winters are not very cold. In the central parts of the country, the continental steppe climate prevails. Although the annual average rainfall in Turkey is about 640 mm, rainfall varies according to years, regions and seasons. The distribution of total annual rainfall between the different regions varies from 200 mm to 3,000 mm.
76. For reasons due to Anatolia's topography, the differences between the temperatures of the various regions in summer are not very wide, but there are wide differences between the regions in winter temperatures. In terms of average and extreme temperatures, wide differences are also observed between different geographical regions and between provinces in the same region. Frequently, there are years when the lowest winter temperature is below -20°C degrees in Central Anatolia and -30°C

degrees in Eastern Anatolia. The region where the highest summer temperatures in the country are recorded (about 35-40°C) is south-eastern Anatolia, where winters are generally mild.

77. Although there has been a moderate level of erosion in previous centuries in Turkey, it has become faster due to improper land usage in the last five to six decades. 73 % of Turkey's land is affected by erosion to varying degrees. The soil will become more susceptible to erosion when the soil surface is deprived of vegetation and as the inclination increases, depending on the wind force and precipitation volume. 27.8 million ha of Turkey's soils have an inclination of 12% and below. 12% is recognized as the upper limit of inclination for use as a farmland, provided, however, that appropriate technical measures are taken to this effect. In Turkey, the areas with the above level of inclination are 35.7% of the entire soil surface. Since all the processed soils either as being farmed or planted have a surface area of around 28 million ha, most of farmlands are susceptible to erosion and are losing their yield efficiency. The main cause of the increase of yield at a slower pace despite the technical measures taken is the reduction of natural yield efficiency on the inclined soils. Productive soil layers erode with the loss of more than around 600 million tons soils every year due to the moderate erosion of 20% of soils (15.6 million ha), to the severe erosion of 36% of soils (20.3 million ha), and to the very severe erosion of 17% of soils (13.2 million ha) of Turkey.
78. Land usage: Turkey's steppes and pastures, so-called herbaceous vegetation cover, is around 21 million ha today. Considering 44,300,000 ha and 37,800,000 ha steppes and pastures cover of Turkey in 1935 and 1950, respectively, the degree of destruction in this ecosystem can be clearly understood. The major cause of this reduction of steppes and pastures cover of the country is that the steppe areas mainly occur in flat plains, that they are proximate to settlement areas and that they are abandoned.
79. Most of the steppe areas have been turned into farming lands and settlement areas in order to meet the food and accommodation needs of growing population. A considerable part of the steppes and pastures cover which constitutes 28% of the country's surface area, has been degraded or become unproductive as a result of uncontrolled grazing, unplanned settlement development and industrialization.

**National Targets in the NBSAP:**

Targets are currently under discussion in the revision study of NBSAP as per COP decision

IX/8 and new targets are being established. However as for now, the revised NBSAP is an early draft.

Target 5. To protect steppe biological diversity, to ensure the sustainable use of its components, as well as to ensure the fair and equitable sharing of the benefits from the utilization of genetic resources; and to combat against the loss of steppe biological diversity and the socio-economic results of that.

Sub-Target 5.2. To identify ecological, physical and social processes such as grazing, drought, desertification, aridity, salinity, flood, fires, tourism, agricultural transformation or abandonment which have adverse impacts on the biological diversity of steppe ecosystems and mainly on the ecosystem structure and function, and to take measures regarding the above.

## Turkmenistan

80. The territory of Turkmenistan (49.1 million ha) is located in the heart of the Asian continent and is a part of Turan climatic province and is extreme northern area of continental subtropical climates of the Central Asia. Major part of the country (80%) is occupied by the deserts - Karakum (35 million ha), Sundukli with adjoining low mountains (2.8 million ha) and Near-Caspian deserts. Along the border with Iran the mountains of Kopetdag-Horasan mountain province are located, on the border with Uzbekistan – Koytendag of Pamiro-Altay mountain system, on the border with Afghanistan – Badhyz hilly mountains as northern part of Parapamiz foothills. The contrast of natural and geographic conditions has defined the range of altitude fluctuations, from -92 m (Archakay depression) to 3139 m (peak of Turkmenbashi, or Ayrybaba Mountain, Koytendag range). Feature specificity of natural conditions of Turkmenistan includes considerable duration of solar light, maximum total index of solar radiation, high heating of the air (above 50°C in the shadow) and soil, sharp continentality and extreme degree of climate aridity. Apart from natural plantings huge areas are occupied by artificial forests (36.4 thousand ha), providing forestation of desert territories.
81. The total area of the state forest fund (SFF) of Turkmenistan is 20.3 % of the country's total area (49,120 thousand ha). The area covered with forest occupies 41 % of the SFF area, or 8,1 % of the country territory. Forests of Turkmenistan perform protective functions and are referred to the category I. The category I forest areas include mountain (524 thousand ha) forests with the very limited area of juniper (archa) light forests, and especially fruit crops (data on areas by species are absent). The largest areas are occupied by sand-desert (9,351 thousand ha) and riparian (tugai) (44.5 thousand ha) woodlands.
82. The forest fund of the country is presented by natural mountain (juniper, pistachio), tugai and desert (saxaul) forests, which occupy 20.3 % of the country's total area. The largest areas are occupied by sand-desert (9,351 thousand ha) and tugai (44.5 thousand ha) forests. Artificial woods (36.4 thousand ha) provide forestation of deserted territories and mountain foresting.
83. Apart from natural plantings huge areas are occupied by artificial forests (36.4 thousand ha), providing forestation of desert territories. Mountain foresting activities are in progress also. In the foothills of Kopetdag near the capital and other big cities on the area of more than 24 thousand hectares, the woodland park zone is created (50 million trees) composed of coniferous and deciduous trees and bushes (1998-2008), forming «a green belt» of the cities.

84. Importance of wood plantings is legalized by the Forest Code of Turkmenistan (1993): it does not comprise such categories, as forest genetic resources; country of origin of genetic resources; country providing genetic resources; there are no data on the legal rules of protection of wild relatives of wood cultures. Starting from 2001, preparation of the new Forest Code edition is in progress; it will lay a way to the development of private forest ownership. Due to the absence of fresh forest arrangement materials, inventory and inspection of forests, during recent years the state account of forest fund and conducting the forest cadastre is weakened. At the same time the state programs are functioning in the country (2005-2010) aimed at restoration of juniper forests and creation of pistachios forest parks. Prevention of woodlands fragmentation is one of the alternatives of adaptation to climate change consequences.
85. The problem of reduction of biodiversity has been incorporated into the National Environment Protection Action Plan (NEAP) of the President of Turkmenistan and is partially considered in the National Action Program to combat desertification, and at the level of forms of adaptation of biodiversity in the Second national FCCC report (2006-2009).
86. In Pastures, non-regulated overgrazing has considerably undermined the natural resources of indigenous plants communities (juniper, mountain mat-grass and fescue steppes, sibljak communities) that led to the soil compaction and washout, surface flow and decrease in soil moisture. This has facilitated destruction of archa plantlets, preventing natural reproduction of small plants and thus intensifying the processes of mountain desertification. In the result of anthropogenic transformation of the mountain ecosystem groupings, the territory of long-standing abnormalities (continuous utilisation of pastures, diverse land fallowing, especially dry farming) was enlarged by the plots of the newest failures.
87. In wetlands also due to the excessive consumption of the resources and distraction of habitats by commercial fishery, in the coastal zone of the bays and in the coast depressions the processes of anthropogenic desertification, salinization, flooding, water-logging and swamping are developing. High mineralization of soils and ground water (more than 100 g/L) led to nearly total loss of vegetation on Balhan residual salt marshes.
88. The arid conditions of Turkmenistan restrict to excess the biological potential of useful and perspective for practical utilisation wild-growing plants. Turkmenistan did not join the Washington Convention on trans-boundary trade in wild fauna and flora species that are endangered (CITES), but it fulfils its demands. The normative and legal foundation exists in the country (The Customs code of Turkmenistan and Rules on moving the goods across the customs border), corresponding to the CITES

principles, really influencing poaching and illegal trade. The total gasification of the settlements has already influenced and continues to positively affect the reduction of the desert ecosystems trees and bushes cutting.

89. Progressing processes of dry and sub-humid lands degradation (desertification) have complicated country possibilities to provide sustainable use of ecosystems and bio-resources. Within the frame of the regional program «The Initiative of the countries of the Central Asia on land resources management» which general concept coincides in general with the NEAP targets, investments for implementation of projects on rational use, restoration and prevention of land degradation are secured. The key target of this initiative is combating degradation of land and improvement of well-being of agricultural population in the region countries.

**National Targets in the NBSAP:**

Problems of preservation of biodiversity and its sustainable use have not been included in the National Action Program to Combat Desertification, action Plan on mitigation of global warming impacts; and have not been considered at the work analysis of sectors of economy in the program document « Sustainable development of Turkmenistan, RIO+10».

## Uzbekistan

90. Uzbekistan is primarily an agricultural nation and is therefore highly dependent on the quality of its natural resources. In the past Uzbekistan's development was unbalanced, with too much emphasis put on production. Particularly agriculture, and not enough attention paid to control and protection of the environment. The territory of Uzbekistan is divided into two sharply different geographical parts: lowlands and mountains. Within these parameters live geographical zones occur, which are distinguished by differences in the main characteristics of their ecological conditions and in composition and structure of their flora and fauna. Almost 85% of its territory is occupied by desert or semi-desert, including the largest desert in Central Asia, the Kyzylkum. These deserts are flanked by the extensive Tien Shan and Gissar-Alai mountain systems in the east and south-east which occupy 15% of the territory.
91. The climate of Uzbekistan is described as subtropical extremely continental with considerable seasonal and daily fluctuations of temperature-long dry hot summer, humid autumn and fluctuating weather in winter. The interaction of three main factors are responsible for this climate, namely solar radiation, general atmospheric circulation and topographic relief. Solar radiation is particularly high, reaching up to 800 to 1,000 MJ/m<sup>2</sup> in summer months. Winds are normally from the north-east, east or south-east in winter, and north, north-west or north-east in summer.
92. Nearly all the deserts and steppes lie below 400 m above sea level including the Kyzylkum Desert, the Usturt Plateau, and the Karshi and Dalverzin Steppes. Average precipitation in these areas is less than 200 mm per year. The maximum precipitation occurs in March and April, the minimum in August and September. Winter is fairly short, about 2 months in the south and 5 months in the north, and produces little snow cover (2 to 11 cm). Average temperatures in January are 30°C in the south (Termez) and -80°C in the north (Usturt). However temperatures can fluctuate very widely (between maximum of 20°C and minimum of -37°C). The frost-free period lasts between 190 and 200 days a year, but can be as short as 160 days in the Usturt Plateau in the far north. Spring is usually short and early, with the growing season beginning in early March in the south and late March April in the north Summers in the deserts and steppes are long, hot, and dry. The maximum temperatures recorded in summer are between 45-49°C and soil surface temperature can reach up to 60-70°C.
93. The mountain zone varies in altitude between about 1,000 and 4,000 m above sea level. Precipitation in this zone occurs throughout the year but is highest during May and June. In some areas average annual rainfall is above 800 mm, and as much as

2,000 mm has been recorded. Snowfall usually occurs at altitudes of 800 m and above. The total snowfall is about 500 cm per year. Above 3,500 to 4,000 m snow cover may last continuously. Precipitation in all zones can show great variability between years (from twice as much as average to three times less).

94. According to information from sources in the Ministry of Agriculture and Water Management the Republics total land resources equalled 44,579 km<sup>2</sup> in 1995. Out of this total area, 61.5% was in agricultural use, 3.6% was under forestry, 2% was made up of permanently protected areas, 26% was unused and the remainder (6.9%) was utilised for urban areas (0.5%) hydro-technical installations (1.5%) industry, transport and other nonagricultural purposes (4%).
95. In terms of agricultural land use the vast majority (82% of agricultural land) was utilised for livestock as pasture or hayfields, with the remainder being cultivated. Cultivated agriculture utilises 10.8 % of the total land area of the Republic, the remainder being other plantations, desert, orchards and lands under forestry administration. About 69% of the total area of cultivated land was irrigated. Over half of the overall protected areas system consists of desert ecosystems (53%). Mountain ecosystems dominate the remaining areas (34%). Wetlands include about 6% of the system and Tugai consists of about 1%.
96. Forests are naturally unevenly distributed within the territory of the republic. According to the State Committee of Forestry, natural vegetation and forests currently occupy 85% of desert steppe areas, 13% of mountains, and in the valleys and floodland areas, which originally were well covered, only 2% remains.
97. Uzbekistan's arid ecosystems take up the majority of the Turan lowlands and include Kyzylkoum and Karakoum deserts, Usturt plateau, Karshi steppe and separate places in the country's south and Fergana valley.
98. Loss of natural forestry and vegetation, the desiccation of the Aral Sea resulting in the creation of a large area of saline desert. overgrazing of pasture lands, alterations in the hydrological system, etc. have set in motion extensive desertification processes in all the Central Asian Republics but most significantly in Uzbekistan, Kazakhstan and Turkmenistan. Remaining areas of both natural and artificial vegetation play a crucial role in reducing the rate of desertification. In the future, to combat this problem, it is necessary to ensure that currently viable areas of vegetation in vulnerable areas are maintained and that efforts to stabilise areas already degraded are undertaken with the long term aim of their restoration. Uzbekistan has ratified the UN convention on Combating Desertification in those countries which face serious drought and or desertification.

### **National Targets in the NBSAP:**

Currently, a long-term Strategy of National Development “Vision 2030”, National Programme for Combating Desertification, Land Degradation and Drought, and Program for Forestry Development are being developed in the Republic of Uzbekistan. In these documents, it is noted that one of the key objectives for the development of the country is the provision of sustainable use of environment and natural resources in Uzbekistan, and their effective protection to ensure the economic prosperity of the country. The conservation of biodiversity and provision of sustainable use of biological resources is recognized as one of the most important conditions of ecological sustainability.

#### **Target 5:**

By 2020, the processes of degradation and fragmentation of the most vulnerable natural ecosystems are studied and a set of measures to reduce the rate of these processes is developed;

By 2020, a set of measures to reduce the rate of degradation and fragmentation of the most vulnerable natural ecosystems is included in the process of sectoral planning;

By 2025, activity that is aimed at conserving and restoring natural ecosystems is included into the national action programmes;

By 2025, the share of degraded lands is decreasing or at least it is stabilised in comparison to 2015;

#### **Target 7:**

By 2025, up to 17% of the country’s territory is covered by effectively managed natural protected areas (I-IV categories);

7.1. By 2020, the necessary changes and amendments are introduced into the legislation on protected areas;

7.2. By 2020, the effectiveness of management of the protected areas system is assessed in accordance with international practice;

7.3. By 2025, the total area of natural protected areas (I-IV categories) is increased;

7.4. By 2025, the ecosystem representativeness of natural protected areas is increased at least by 10% of the area of each type of natural ecosystems;

7.5. By 2025, the system of protected areas includes more unique natural sites in comparison to 2015;

7.6. By 2025, the number of rare and endangered species of plants covered by territorial protection (protected areas of categories I-IV) increased to 70%;

7.7. By 2025, the number of rare and endangered species of animals that are covered by the territorial protection (protected areas of categories I-IV) has increased up to 90%.

## Perspective of Fundraising for the Project

99. The Project will be implemented over 3 years; subjected to review and evaluation; and leading on to a 10-year campaign program to promote, replicate and enhance a selection of the most effective long-term solutions to dryland conservation. Once confirmed at the project design period, budget plans will be used as the basis for negotiating financial contributions from countries and partners to implement the project. The finalised budget will be reviewed and adjusted as required as part of the project Inception.

100. Accessibility of international environmental funds for ECO Member States are summarised in the following Table:

**Table 1.** Accessibility of international environmental funds for ECO Member States

Fund	Countries										Regions	
	AFG	AZE	IRA	KAZ	KYR	PAK	TAJ	TKY	TKM	UZB	CA	ECO
<b>GCF</b>	***	***	***	***	***	***	***	***	***	***	***	***
<b>AF</b>	**	-	-	-	**	**	**	-	**	**	-	-
<b>GEF</b>	**	**	**	**	**	**	**	**	**	**	**	**
<b>SGP</b>	*	*	-	-	*	*	*	*	*	*	X	X
<b>SCCF</b>	-	*	-	-	**	*	**	-	-	-	X	X
<b>LDCF</b>	**	X	X	X	X	X	X	X	X	X	X	X
<b>CDM</b>	-	-	-	-	-	*	-	-	-	*	X	X
<b>REDD+</b>	**	*	*	*	*	**	*	*	*	*	-	-
<b>FCPF</b>	-	-	-	-	-	**	-	-	-	-	-	-
<b>CIF</b>	-	-	-	**	-	-	***	-	-	-	-	-
<b>FIP</b>	-	-	-	-	-	-	-	-	-	-	-	-
<b>PPCR</b>	***	-	-	-	***	-	***	-	-	-	-	-

<b>ASAP</b>	-	-	-	-	-	-	-	-	-	-	-	-
<b>IFAS</b>	X	X	X	**	*	X	*	X	*	**	**	X
<b>CAMP4A grant facility</b>	X	X	X	*	*	X	*	X	*	**	**	X
<b>NAMA</b>	-	-	-	X	**	-	**	X	-	**	X	X
<b>ICI</b>	*	*	*	*	**	*	**	*	*	**	*	-
<b>NICFI</b>	-	-	-	-	-	-	-	-	-	-	-	-
<b>ICF</b>	-	-	-	-	-	-	-	-	-	-	X	X
<b>BioC</b>	-	-	-	-	*	-	-	-	-	-	X	X
<b>EU</b>	**	**	-	**	**	*	**	**	**	**	**	-
<b>South- South</b>	*	-	-	-	*	-	*	-	-	*	-	-
<b>TIKA</b>	*	*	-	-	*	*	*	X	*	*	-	-
<b>KazAID</b>	*	X	-	X	*	X	*	X	-	X	-	X
<b>PES, C bazaar</b>	-	-	-	**	*	*	*	-	-	-	-	-

101. For some donors, the broad strategy for financing the project is for the applicant countries or institutes to contribute a major percentage of the funds required, and for the remaining to be contributed in the form of grants from the international financing mechanisms.

102. Following mechanisms are the potential supporting funds for this project:

### **Global Environment Facility (GEF)**

103. The Global Environment Facility is a multilateral financial institution, with 173 member countries, bringing development institutions, the scientific community, civil society organizations, private sectors and non-governmental organizations together on behalf of a common global environment agenda. Its secretariat is based in Washington D.C. and managed by the World Bank under the supervision of the GEF

Council, which is the GEF's decision-making and control authority. The GEF was established by the World Bank, the UN Development Program (UNDP) and the UN Environment Program (UNEP) in 1991 with a pilot phase up to 1994 to fund certain developing country projects that have global environmental benefits, not only in the area of climate change, but also biodiversity, protection of the ozone layer and international waters. The issue of land degradation is also included in funding as a cross-cutting issue.

104. The financial mechanism is accountable to the Conference of the Parties (COP), which decides on its climate change policies, program priorities and the eligibility criteria for funding. The COP therefore provides regular policy guidance to the financial mechanism on its climate change work, based on advice from the Subsidiary Body for Implementation (SBI). The Kyoto Protocol will use the same financial mechanism. The GEF will also manage newly created funds related to climate change and developing countries: the Special Climate Change Fund, the Least Developed Countries Fund and the Adaptation Fund, provided for in the Marrakech Accords.

105. Project proposals must come from beneficiary countries, from their national offices, non-governmental organizations or the private sectors, and must be consistent with national priorities in sustainable development. Projects can deal with economic and social development, as well as environmental protection. A project can be presented as investment and technical assistance, capacity reinforcement, research or as a micro-project.

- To be eligible to GEF funds, projects MUST:
- have a significant positive impact on global environment;
- justify incremental costs;
- be located in developing countries that ratified the Convention.

### **Funding Options of GEF**

106. **·Full-sized Projects (FSPs)**. GEF's three implementing agencies (and soon regional development banks) work with the operational focal point in each recipient country to develop project ideas that are consistent both with the country's national programs and priorities and with GEF's operational strategy and programs. Regional or global programs and projects may be developed in all countries that endorse the proposed activity.

107. **·Medium-Sized Projects (MSPs)**. Grants of less than US\$ 1 million are available through expedited procedures that speed processing and implementation. These medium-sized grants increase GEF's flexibility in programming resources and

encourage a wider range of interested parties to propose and develop project concepts.

108. **·Enabling Activities.** Grants for enabling activities help countries to prepare national inventories, strategies, and action plans in cooperation with the Convention on Biological Diversity (CBD) and the UN Framework Convention on Climate Change (UNFCCC). This assistance enables countries to assess biodiversity and climate change challenges from a national perspective, determine the most promising opportunities for project development, and subsequently pursue full-scale projects.
109. **·Project Preparation and Development Facility (PDF).** Funding for project preparation is available in three categories or "blocks". Block A grants (up to US\$ 25,000) fund the very early stages of project or program identification, and are approved through GEF's implementing agencies. Block B grants (up to US\$ 350,000) information gathering necessary to complete project proposals and provide necessary supporting documentation. These grants are approved by the GEF CEO, with attention to the GEF operations committee's recommendations. Block C grants (up to US\$ 1 million) provide additional financing, where required, for larger projects to complete technical design and feasibility work. Block C grants are normally made available after a project proposal is approved by the GEF Council.
110. **·Small Grants Program (SGP).** UNDP administers this project, which offers grants of up to US\$ 50,000 to eligible projects.
111. **·Small and Medium Enterprise (SME) Program.** A partnership with the International Finance Corporation (IFC), a World Bank affiliate, the SME program finances projects that demonstrate a positive environmental impact and have basic financial viability, thus promoting private sector investment opportunities in developing countries.

### **Islamic Development Bank (IDB)**

112. IDB project financing is carried out with reference to the strategic framework of the IDB Group. The fight against poverty which is the overriding objective of the IDB Group requires a multi-pronged approach. As a general rule of thumb, high and sustained economic growth is a pre-requisite to reducing poverty, assuming that such growth is matched with a 'fair' re-distribution of wealth and deliberate moves by governments to target the poor segments in society. Against this backdrop, a project or program is deemed pro-poor if it aims to create a critical mass of beneficiaries-cum-consumers that will, in the long run, support and sustain the local economy (hence the direct link between economic growth and poverty reduction). It also implies that any intervention by IDB and the international donor community at large must occur in areas or sectors that benefits or uplifts a greater

majority of people. These "broad-based growth approaches" are the very basis of the complex's sector and thematic priorities.

113. Considering that poverty in the majority of member countries is a rural phenomenon, investment in the agricultural sector, in which the bulk of the population depends for its livelihood, is an obvious target for any poverty reduction program. In addition to agriculture, other broad-based growth sectors are health and education (or collectively referred to as human development). Water supply, sanitation, transport and power supply fall under the thematic group of infrastructure.

#### **Project Cycle of IDB**

114. Each project financed by IDB passes through a cycle that, with some variations, is common to all projects. The Bank's project cycle which is to a large extent similar to that in other development financing institutions, covers the life of a typical project from identification of needs and priorities until the final completion of work and evaluation of results and the Bank's role in each of them. The cycle is constituted by:

#### **Project Identification**

115. This is the first phase of the project cycle. Identification proceeds against the background of the country development plan and the Bank priorities. Identification of a project can come from several sources, including the Government, IDB missions and from contacts with other development finance institutions, UN agencies, or private sponsors. In all cases, in order to be considered for financing by IDB, a project should have official Government endorsement and must also meet a prima facie test of feasibility that technical and institutional solutions are likely to be found at costs commensurate with expected benefits.

116. Once identified, a project might be incorporated into a rolling three-year work program for the country concerned. The programme forms the basis for the Bank's future operations in that country and is used for budgeting the Bank's operations and for assuring that the resources are available to support each successive phase of the project cycle. The Three-Year Work Program is basically prepared through a Country Assistance Strategy Study (CASS) undertaken every three years. The program is subsequently updated in the light of requests that are received thereafter. Some Governments have however agreed that such endorsement is not necessary for projects submitted by the private sectors of their countries.

#### **Preparation**

117. An extensive preparation period of close collaboration between the Bank and the beneficiary/executing agency begins, the purpose of which is to transform the project idea into a detailed proposal that covers the full range of technical, economic, financial, social, institutional and environmental aspects. Major aspect in the preparation process is the project feasibility study which aims at defining the best method to achieve the project's objectives, by comparing alternatives on the basis of their relative costs and benefits.
118. Formal responsibility for project preparation rests with the beneficiary. The Bank plays an active role in making sure that the beneficiary has the capacity and resources to prepare the project, ensuring the beneficiary understands the Bank's requirements and standards, updating and filling gaps in projects that are inadequately prepared, etc. The Bank can extend financial and technical assistance for project preparation in a number of ways. In particular, it can provide financing for preparation of feasibility study, detailed design or preparation of tender documents. In providing this help, the Bank ensures that the applicant is fully committed to the project and deeply involved in its preparation.

#### **Appraisal/Negotiation**

119. After the completion of the project preparation stage, the Bank reviews the proposal and undertakes a full-scale project appraisal. Appraisal covers comprehensive review of the technical, economic, social, financial and institutional aspects as well as the environmental aspects of the project proposal and lays the foundation for implementing the project and evaluating it when completed.
120. An appraisal mission examines such matters as the financing plan, components to be financed by IDB, terms and conditions of IDB financing, project procurement action plans, project implementation plans, and disbursement profiles. It also reviews the legal aspects of the project including the draft project financing agreement and conditions of effectiveness and concludes an understanding on these issues with the executing agency (and the government, if applicable). The appraisal mission and the beneficiary endeavour to agree on the measures necessary to assure the success of the project.
121. The draft project financing agreement is negotiated and, at the end of the appraisal mission work, a Memorandum of Understanding (MOU)/ Minutes of Meeting reflecting the discussions and understanding reached by the appraisal mission and the beneficiary is signed.
122. Appraisal of a project is the Bank's responsibility but is conducted in full coordination with the Beneficiary. It is carried out by the Bank staff, supplemented by

outside consultants if necessary. Appraisal activities cover the review and assessment of the following major aspects of a project:

123. **Technical:** The Bank has to ensure that projects are soundly designed, appropriately engineered, and follow accepted industry/sector standards. The appraisal mission looks into technical alternatives provided, solutions proposed and the results expected.

124. The technical appraisal is concerned with questions of physical scale, layout, and location of facilities. It looks into the technology to be used, including types of equipment or processes and their appropriateness to local conditions; the approach to be followed for the provision of services; how realistic the implementation schedules are; and the likelihood of achieving expected levels of output.

125. **Institutional:** The Bank mission verifies whether the Executing Agency is properly organised and its management and staff are adequate to handle the project, whether it needs capacity building support, setting up of a Project Management Unit (PMU), etc. This is essential in order to avoid problems that often arise during project implementation and operation. The executing agency is provided adequate financial and human resources both by the beneficiary and IDB to implement the project successfully and also to maintain and operate the project after it is completed. For implementation purposes, the establishment of a PMU is deemed essential. Both IDB appraisal team and the beneficiary discuss this matter along the following terms:

- Suitable type of PMU;
- Selection of an adequate project manager, with a professional profile suitable for the assignment;
- PMU set up;
- Project Monitoring System and Project Performance Indicators;
- Logistical support;
- Functions of the PMU;
- Reporting system;
- Auditing;
- Completion report.

126. **Economic:** The project is studied thoroughly in its various sector settings. The investment program for the sector, the strengths and weaknesses of public and private sector institutions, and key government policies are all examined.

127. The project is subjected to a detailed cost-benefit analysis of alternative project designs, the result of which is usually expressed as an economic rate of

return and the one that contributes most to the development objectives of the country may be selected.

128. "Shadow" prices are used routinely when true economic values of costs are not reflected in market prices as a result of various distortions, such as trade restrictions, taxes, or subsidies. The distribution of the benefits of a project and its fiscal impact are considered carefully. Since the estimates of future costs and benefits are subject to substantial margins of error, a sensitivity analysis is always made of the return on the project to variations in some of the key assumptions. Macro-economic benefits such as value added, effect on employment, generation of foreign exchange, etc., are also considered.
129. **Financial:** Financial appraisal has several purposes. One is to ensure that there are sufficient funds to cover the costs of implementing the project. Normally, the Bank does not finance the total project costs. The beneficiary or the government are expected to meet some or all of the local costs. In addition, other financiers may join to co-finance a project. Thus, project appraisal ensures IDB to a financing plan that will make funds available to implement the project on schedule. The appraisal mission should also discuss whether retroactive financing would be required, i.e. financing expenditures incurred and paid for by the beneficiary between the date of appraisal and the date of effectiveness of the project financing agreement. Such facility is to be used only in exceptional circumstances with appropriate justification. Some typical reasons are early project start-up, avoidance of gap between sequential projects, as in the case of repeater projects for financing intermediary on-lending operations, maintenance of momentum achieved during project preparation, and prevention of delays. The retroactive financing covers items such as pre-investment work (e.g. engineering and architectural work), preliminary physical work (e.g. as access roads); office equipment for the PMU, etc. The maximum permissible under retroactive financing is 10% of IDB total financing.
130. The financial appraisal is also concerned with financial viability. This includes an assessment of the enterprises ability to meet all its financial obligations, including repayments to the Bank; capability to generate enough funds from internal resources to earn a reasonable internal rate of return (FIRR) on its assets and make a satisfactory contribution to its future capital requirements, etc. The finances of the enterprise are closely reviewed through projections of the balance sheet, income statement, and cash flow. Additional safeguards of financial integrity may include establishing suitable debt-to-equity ratios or placing a limit on additional long-term financing. Other financial indicators such as break-even-point, liquidity and acid-test ratios, etc., may be calculated depending on the project type.

131. The financial review often highlights the need to adjust the level and structure of prices charged by the enterprise. It is also concerned with recovering investment and operating costs from project beneficiaries.
132. **Social:** Social assessment provides a benchmark on potential beneficiaries and the extent to which project benefits and costs will be distributed among them. Adverse effects are to be quantified and appropriate remedial actions put in place to alleviate them.
133. Another aspect of social appraisal is to have a better understanding of the local organisational arrangements (socio-cultural issues) so that these are incorporated in the design of the project for its successful implementation.
134. **Environmental Impact:** Environmental impact assessment has become an important tool in project design and selection due to the inseparable relationship between socio-economic development and environment. The decision to carry out such an assessment depends upon the nature and scale of the project and is done at the early stages of project preparation so that the final design incorporates the key environmental aspects.

#### **Approval and Signing**

135. The appraisal mission prepares a Staff Appraisal Report (SAR) and Report and Recommendation of the President (RRP) that set forth its findings and recommends the level and terms and conditions of IDB financing. These reports are carefully prepared to reflect the agreements reached during appraisal. They are reviewed, and cleared according to IDBs internal processes and procedures.
136. Upon obtaining the formal concurrence of the beneficiary on the proposed terms and conditions of IDB financing, the project is presented to the Board of Executive Directors for final approval. On approval by the Board, the decision is intimated to the beneficiary. Subsequently, the project agreement is finalised and signed. This marks the end of the processing phase of the project cycle and the beginning of the implementation. The staff appraisal report is provided to the beneficiary and the project executing agency. Some projects may be approved directly by the President.

#### **Implementation and Follow-up**

137. The main stage in the life of a project is its actual implementation over the period of construction and subsequent operation. Implementation of the project is the responsibility of the beneficiary. The Bank's role is to follow-up the implementation and procurement processes. Follow-up is primarily concerned with that period in the project's life when physical components are being constructed,

equipment purchased and installed, services rendered and new institutions, programs, and policies put in place.

138. The main purpose of follow-up is to help ensure that a project achieves its development objectives and, in particular, to work with the beneficiary in identifying and dealing with problems that arise during implementation. Follow-up, therefore, is primarily an exercise in collective problem solving. Follow-up takes place in a variety of ways. During appraisal, agreement will have been reached on a schedule of progress reports to be submitted by the beneficiary. Based on this, the beneficiary provides progress reports periodically covering the physical execution of the project.
139. The progress reports are reviewed at the Bank. Problems that surface are dealt with through correspondence or in the course of project follow-up missions undertaken by the Bank staff. The frequency of these missions is tailored to suit the complexity of the project, the status of its implementation, and the number and nature of problems encountered. Missions are also mounted on selective basis to undertake portfolio review exercise in member countries where all approved projects are closely scrutinized and followed up.
140. **Supervision:** Supervision by the Bank, as a financing institution, is a continuous set of project activities that start after the Board approval and ends up with the preparation of Project Completion Report. The supervision is carried out both within the Headquarters and with the beneficiary during the Bank's field visits.
141. In the Headquarters, supervision encompasses such activities as: ensuring timely declaration of effectiveness of the financing agreement, review of Progress Reports received from the executing agency, handling procurement and disbursement, monitoring implementation problems faced by project and taking appropriate action, and preparing Project Completion Report. The Bank mounts field missions periodically to assess project progress, identify issues and bottlenecks and take corrective action, monitor actual compliance to the Bank's policies and procedures, etc.
142. **Procurement:** An important element of project follow-up concerns with procurement of goods and services financed under the project agreement. Procurement is carried out in accordance with IDB guidelines, incorporated in the project agreement that are designed to ensure that the requisite goods and services are procured in the most efficient and economical manner.
143. **Completion:** Upon physical completion of the project, the beneficiary submits a Project Completion Report (PCR) to the Bank. Subsequently, the concerned Country Operations Department prepares the Bank's Project Completion Report. If a part of IDB approved financing remains unutilised at project completion,

it is normally cancelled; its utilisation will be considered only on exceptional basis, and in any case, strictly for improving the efficiency of the project.

### **Post-Evaluation after Completion**

144. Upon completion, Bank-assisted projects are subjected to post-evaluation. To ensure its independence and objectivity, this review is carried out by the Operations Evaluation Office (OEO), which is entirely separate from the Bank's operations departments and reports directly to the President.
145. OEO prepares an independent evaluation report on each project within 2-5 years of its completion. This report assesses the impact of the project and compares actual results with what had been expected at the time of project appraisal. Valuable lessons are learned over time from the successes and failures. Results and recommendations drawn from these reports are fed back into the design and implementation of future policies and financing operations. The Bank's role in the project cycle is performed largely by its Country Operations Departments with the involvement of the Legal Department, the Finance Department, the Operations Planning and Services Department, the Operations Evaluation Office and, in certain cases, the Regional Offices and the Field Representatives.

### **Asian Development Bank<sup>2</sup>**

146. Most of ADB's lending comes from its ordinary capital resources, offered at near-market terms to lower- to middle-income countries. ADB also provides loans and grants from Special Funds, of which the Asian Development Fund is the largest. The Asian Development Fund offers loans at very low interest rates and grants that help reduce poverty in ADB's poorest borrowing countries.
147. Thanks to robust partnerships with its development partners, ADB achieved US\$22.9 billion in operations in 2014 by leveraging US\$9.2 billion in co-financing—a record high for ADB—with US\$13.7 billion of its own resources.
148. Of the total co-financing, US\$4.4 billion was obtained through partnerships with official and other concessional financing sources, including bilateral and multilateral organisations, other public agencies, foundations, and corporate social responsibility programs. Financing support from these development partners increased by 15% in the face of global fiscal constraints, from US\$3.8 billion in 2013.
149. In the context of Strategy 2020 and in the follow-up to the United Nations Conference on Sustainable Development (Rio+20), ADB prepared the Environment Operational Directions, 2013–2020, to provide a coherent overview of ADB

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<sup>2</sup> Iran and Turkey are not eligible.

environment operations and to articulate how it will step up efforts to help the region achieve a transition to environmentally sustainable growth or green growth. To promote the transition to green growth, and address the causes and consequences of climate change, four mutually supportive environment operational directions have been identified:

150. Promoting a shift to sustainable infrastructure. Help developing member countries build infrastructure that contributes to environmentally sustainable and low-carbon development, as well as to increased resilience to climate change and other threats;
151. Investing in natural capital. Help reverse the ongoing decline of natural capital to ensure that environmental goods and services can sustain future economic growth and wellbeing, build climate resilience, and contribute to carbon sequestration;
152. Strengthening environmental governance and management capacity. Build sound environmental governance and management capacity for improved environmental and natural resource management including the strengthening of country systems and capacities for environmental safeguards;
153. Responding to the climate change imperative. Promote climate change response actions—both adaptation and mitigation—that will cut across the other three directions and be fully integrated within each.
154. In 2013, 57 projects amounting to US\$5.63 billion had environmental sustainability as a theme, representing 40% of total financing and 48% in number of projects.
155. ADB's clean energy investments in 2013 reached US\$2.34 billion. They will provide 1,390 MW of renewable energy generation capacity, save 1.987 TWh of electricity and 4,691 Tj in fuel per year, and reduce annual greenhouse gas emissions by 7.06 million tons carbon dioxide equivalent.
156. ADB's first urban transport project, the Lanzhou bus rapid transit (BRT) system, opened in the People's Republic of China.
157. ADB continues to be a partner in various regional cooperation initiatives on the sustainable management of critical ecosystems in the Coral Triangle, the Greater Mekong Subregion, and the Heart of Borneo.
158. ADB supported activities that strengthened country safeguard systems in 15 DMCs and worked with the Asian Environmental Compliance and Enforcement

Network and the Asian Judges Network on Environment to strengthen environmental compliance in the region.

159. Four new Global Environment Facility (GEF) grants were approved in 2013. Under an ADB-led sustainable transport and urban development program, the GEF approved a US\$2.5 million grant for sustainable transport in Jiangxi Province, and a US\$9 million grant for a coral reef rehabilitation and management program in Indonesia.

### European Union International Cooperation and Development

160. A Grant or Call for proposals is a public invitation by the Contracting Authority, addressed to clearly identified categories of applicants, to propose operations within the framework of a specific EU programme. Grants are direct financial contributions from the EU budget or from the European Development Fund. They are awarded as donations to third parties that are engaged in external aid activities. The Contracting Authority awards grants that are used to implement projects or activities that relate to the EU's external aid programmes.

161. Grants fall into two categories:

**Grants for Actions:** aim to achieve an objective that forms part of an external aid programme;

**Operating Grants:** finance the operating expenditure of an EU body that is pursuing an aim of general European interest or an objective that forms part of an EU policy.

162. Grants are based on the reimbursement of the eligible costs, in other words, costs effectively incurred by the beneficiaries that are deemed necessary for carrying out the activities in question. The results of the action remain the property of the beneficiaries.

163. Grants are subject to a written agreement signed by the two parties and, as a general rule, require co-financing by the grant beneficiary. Since grants cover a very diverse range of fields, the specific conditions that need to be fulfilled may vary from one area of activity to another.

## Summary Problem Analysis

164. The central problem is widespread Land Degradation that is occurring across the territories of the 10 ECO Member States (as well as in other neighbouring States in the region and elsewhere). The main aspects of Land Degradation in the ECO region are:
165. Loss of vegetation and ground cover; loss of soil quality, organic matter and soil moisture; loss of soil crop productivity; loss of biodiversity and ecosystem health;
166. Increased soil erosion and loss by wind; increased soil erosion by water; increased wind-borne sand and dust; increased soil salinity.
167. The general cause of Land Degradation is that the land and its vegetative cover are being over-used by a variety of human land-use activities, in ways that cannot be sustained. A range of factors can be operating in different parts of the region, including the following:
168. Excessive grazing, cropping, irrigation, inorganic fertilisers, timber-cutting, extraction of sand or gravel, extraction of ground or surface water, urban or infrastructure development;
169. Drylands are more vulnerable to over-use because they are naturally less productive; they can support only low levels of extraction or use, are more easily damaged, take longer to recover; and generally need more careful management;
170. Climate change is resulting in more variable weather, which may include greater fluctuations in air temperature, harsher droughts, and more intensive storms, rainfall and flooding in different parts of the region. These effects exacerbate the problems of land degradation and require even more careful management of drylands by land users, graziers, farmers and land managers.
171. The effects or consequences of the various aspects of Land Degradation include the following:
- Failures of livestock, crops and food security;
  - Failures of rural livelihoods and communities;
  - Human health affected by sand and dust storms;
  - Damage to infrastructure, property, life from flooding, salinity, erosion and landslides.

172. In developing and executing a collaborative project, the goal of the ECO Member States is to make a substantial contribution to halting and reversing land degradation and desertification processes across the region. The specific purpose of the proposed initiative will be to significantly strengthen and expand dryland conservation measures in each of the member State territories. This will be achieved through two main mechanisms, of regional collaboration, monitoring and knowledge exchange, combined with support for a portfolio of local and sub-national actions that demonstrate enhanced and expanded practices in sustainable dryland management and conservation. Through these dual mechanisms of knowledge exchange and on-the-ground demonstration actions, this initiative will test, promote and campaign for four main strategies or types of actions to strengthen dryland conservation efforts in the countries:

- Actions to enhance and extend policies and practices for sustainable dryland management;
- Actions to control and phase-out damaging land-use practices, especially in the most vulnerable parts of the region;
- Actions to significantly scale-up dryland ecological restoration activities, especially in critical zones and localities;
- Actions to support expansion of long-term conservation measures for healthy dryland ecosystems.

173. The initiative will establish a regional and national coordination unit and Information exchange, with the task of providing a common monitoring and reporting mechanism, and strengthening collaboration and exchange of knowledge about dryland conservation between all the participating ECO Member States. Activities will include monitoring and raising awareness of the issues of land degradation; identifying past and present land management projects and practices that have proved effective; exchanging lessons drawn from successes in each land-use sector; sharing reports on the baseline state of dryland conservation in each ECO country; and on regular evaluation of progress with the initiative portfolio in each country.

174. The initiative will also develop a support mechanism for a portfolio of local and sub-national actions in dryland conservation. The program mechanism will provide supplementary co-financing grants to strengthen dryland conservation measures in existing and planned projects. Government, non-government, private sector and community organisation stakeholders working in dryland management, conservation or a land-use sector – agriculture, grazing, quarrying, tourism, etc. – will be able to apply for a grant and implement the enhanced or extended project in

accordance with the set grant conditions. The initiative will promote and facilitate development of the portfolio of dryland conservation actions, and will monitor and publicise the results and lessons demonstrated by each action.

175. The initiative will be developed and implemented in three main phases – to establish, scale-up and sustain the initiative.

176. In the 1<sup>st</sup> Phase, over the first two years, the management and administration mechanisms to implement and coordinate the information exchange and the support mechanism for the demonstration portfolios will be established, and operations started:

177. A regional coordination unit and a national facility in each country will be established; the network's capacity will be developed – finance, admin, knowledge management and communication. The national units will collaborate with each other to establish monitoring and regional information exchange.

178. Baseline studies will be conducted and knowledge shared through a network; the work will identify and monitor (a) current state and trends in land degradation; (b) unsustainable land-use practices in each major sector; and (c) existing pilots and demonstrations of effective sustainable land-use and dryland conservation.

179. The support mechanism will be established to develop a portfolio of local and sub-national demonstration actions in country.

180. In the 2<sup>nd</sup> Phase, the initiative will be brought in full operation:

- A substantial portfolio of actions will be underway, demonstrating each of the four strategies to strengthen dryland conservation. The actions will be implemented by local and national stakeholders and the initiative unit, working in partnership. The aim will be to support the selected demonstration actions, through co-financing grants and knowledge-exchange, for an initial period of up to five years.
- During this phase, the results and impacts achieved by each action, under each of the strategies, and across the whole portfolio, will be monitored and publicised, with the information shared openly between stakeholders and across the region.
- The monitoring facility will be used to prepare a series of major analyses of activities and achievements under each of the four strategies, in each land-use sector and in each country and broadly across the region.
- At the end of the 5 year period, a broad participatory review of the initiative will be carried out, involving all stakeholders, and decisions made on how best to revise and sustain the initiative.

181. In the 3<sup>rd</sup> Phase, based on the review findings and decisions, the initiative will be revised and extended.

182. Based on this assumption a planning framework will be described in detail, to comprise a high level Goal, a specific Project Purpose, and main Components, under which activities will be designed to produce clear sets of planned results, which together lead to the Components' Outcomes. Subsequent sections of the project plan will specify the proposed Management Arrangements for implementing the Project; the budget/ funds required to implement the range of activities and produce the sets of planned Results; the proposed mechanism for Monitoring, Evaluation and Review of the Project; and an analysis of risks to be managed to ensure that the project can succeed as planned.

183. It is anticipated that a provisional implementation plan and timetable for the project will be outlined, with the intention that a fully-detailed implementation plan to be developed and confirmed as part of the project Inception process towards the following three main Component Outcomes:

Outcome 1. Collaboration:

Strengthened synergy will be achieved, through regional and national coordination and networking, with cooperative engagement and participation in the Initiative, by diverse groups of stakeholders and practitioners in land-use management and conservation, across the participating countries.

Outcome 2. Knowledge Management:

Knowledge and understanding will be strengthened, through research, data compilation, communication and exchange, concerning land degradation issues, and sustainable land conservation solutions in each of the participating countries.

Outcome 3. Effective Actions:

Through Outcome 1 networks, and based on Outcome 2 findings, initial series of actions will be planned and mobilised as demonstration campaigns.

## References:

- Afghanistan's fifth national report to the united nation's conventions on biological diversity (2014).
- Azerbaijan's fifth national report to the united nation's conventions on biological diversity (2016).
- Iran's fifth national report to the united nation's conventions on biological diversity (2016).
- Kazakhstan's the fifth national report on progress in implementation of the convent on biological diversity (2013)
- Kyrgyzstan's fifth national report on conventions of biodiversity (2013)
- Pakistan's fifth national report to the conventions on biological diversity (2014)
- Tajikistan's fifth national report on preservation of biodiversity (2014)
- Turkey's fifth national report to the united nation's conventions on biological diversity (2014)
- Uzbekistan's fifth national report on conventions of biological diversity (2015)