

THE STATE OF BIODIVERSITY IN WEST ASIA

A MID-TERM REVIEW OF PROGRESS TOWARDS THE AICHI BIODIVERSITY TARGETS



Convention on Biological Diversity



Preparation

This study was commissioned by the Division of Environmental Law and Conventions (DELIC) of the United Nations Environmental Programme (UNEP) under the leadership of Ms. Elizabeth Maruma Mrema, DELIC Director, and the direct supervision and initial compilation of Ms. Diane Klaimi, UNEP's Regional Coordinator for Ecosystem and Biodiversity in West Asia. Additional funding has been provided by the UNEP World Conservation Monitoring Centre (UNEP-WCMC) and the Secretariat of the Convention on Biological Diversity (SCBD). The design, printing and distribution of this report was enabled through the financial contribution of the European Union.

Citation

UNEP-WCMC (2016) The State of Biodiversity in West Asia: A mid-term review of progress towards the Aichi Biodiversity Targets. UNEP-WCMC, Cambridge, UK.

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Published by the United Nations Environment Programme (UNEP), May 2016

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ISBN: 978-92-807-3510-9
DEP/1926/CA

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Acknowledgements

This report was developed by Hilary Allison, Neil D. Burgess, Fiona S. Danks, Matthew Dixon, Yara Shennan-Farpon and Nanna G. Vansteelant (UNEP-WCMC). We thank the following people for their valuable inputs during the initial preparation of this report: Maroun Abi Chahin (CBD Secretariat); Fouad Abousamra (UNEP); Lina Al-Awadi (Kuwait CBD FP); Ali Al-Lami (Iraq CBD FP); Sumaya Al-Majthoob (UNEP); Mohamed Al-Shamlan (UNEP); Mohammed Al-Sinaidi (Oman FP); Nouf Al-Wasmi (Bahrain CBD FP); Raed Bin Hani (Jordan CBD FP); Luke Brander (TEEB Expert); Maryam Busaidi (OMAN FP); Florian Eppink (Landcare Research); Mia Fant (Italy Expert); Jane C. Glavan (AGEDI); Garo Harutunian (UNDP); Ghassan Jaradi (Lebanon expert); Deena Jebry (Iraq Expert); Julien Jreissati (BirdLife International); Maral Khaled Chreiki (EWS-WWF); Mohammad Mahasna (Palestine CBD FP); Humood Naser (University of Bahrain); Alessandra Rossi (Italy expert); and Elsa Sattout (independent).

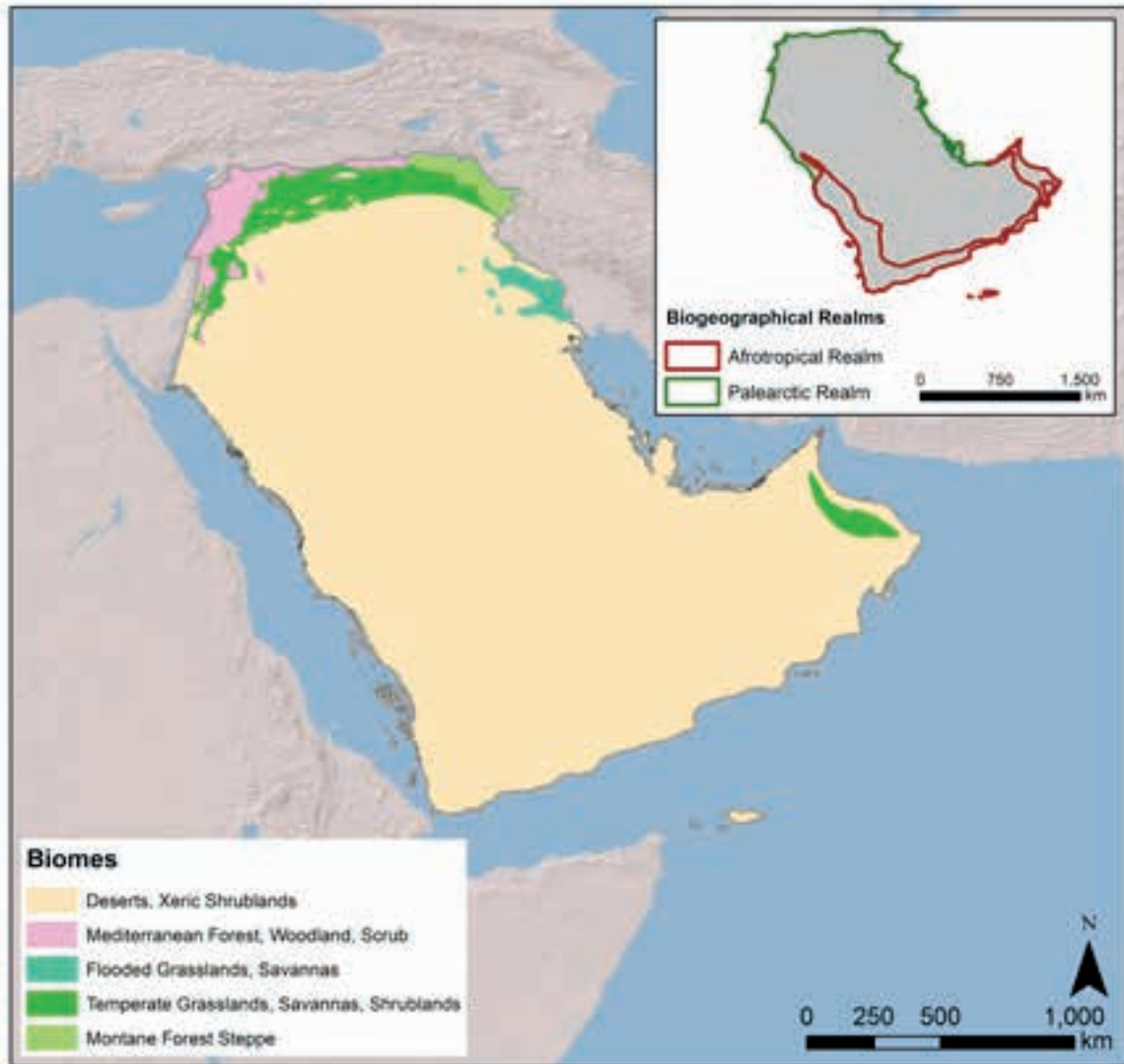
Contributions were received from Philip Bubb, Erin Dillon, Jerry Harrison, Diego Juffe-Bignoli, Brian MacSharry, Abisha Mapendembe, Murielle Misrachi, Judith Walcott and Matt Walpole (UNEP-WCMC); Ellen Shepherd (independent consultant); and Diane Klaimi (UNEP).

Drafts were reviewed by Reem Abdulla Al Mheiri (IUCN); Hamda Ahmed Lootah (Ramsar); Obaid Ali Alshamsi (IUCN); Hassina Ali Chichi (IUCN); David Cooper (CBD Secretariat); Ahmed Esmail Al-Hashmi (MOEW, UAE); Lisa Ingwall-King (UNEP-WCMC); Tim Hirsch (GBIF); Robert Höft (CBD Secretariat); Melanie Hutchinson (UNEP-DELC); Diane Klaimi (UNEP); Kieran Noonan Mooney (CBD Secretariat); Brian O'Connor (UNEP-WCMC); Hiba Obaid Al-Shehhi (Ministry for Environment and Water, UAE); Muna Omran Alshamsi (IUCN); Elsa Sattout (independent); and Hany el Shaer (IUCN).

We thank for the assistance in data and information provision, interpretation and review: Edward van Asch (CITES); Roswitha Baumung (FAO); Albert Bleeker (International Nitrogen Initiative); Stuart Butchart (BirdLife International); Peder Engstrom (University of Minnesota); Lisa Farroway (CITES); Alessandro Galli (Ecological Footprint); Chandra Giri (USGS); Irene Hoffmann (FAO); Fridolin Krausmann (Alpen-Adria Universitat); Jan Legind (GBIF); Gregoire Leroy (FAO); Jonathan Loh (WWF/ZSL); Katie Longo (Ocean Health Index); Louise McRae (ZSL); Haruko Okusu (CITES); Thomasina Oldfield (TRAFFIC); Tim Robertson (GBIF); Brooke Russell (Aid Data); Yichuan Shi (UNEP-WCMC); and all others who may have contributed to the process.

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Distribution of main biomes and biogeographical realms (inset) on land in the West Asia region (map produced by UNEP-WCMC using data from Olson et al. 2001).



The boundaries and designations shown on this map do not imply official endorsement or recognition by the United Nations

Figure 1: Countries in the West Asia region and their Exclusive Economic Zone (UNEP 2016).

FOREWORD

West Asia contains a highly contrasting range of terrestrial, freshwater and marine ecosystems, ranging from Mediterranean forests, sandy and stony deserts, oases, savannas, plains, and rangelands, through to springs, lakes, mudflats, marshes, mangroves, seagrass beds and coral reefs. Such a diversity of ecosystems supports considerable biodiversity, which underpins a wide array of ecosystem services used by the people of the region.

The first *Status of Biodiversity in West Asia* report was produced in 2010 by the United Nations Environment Programme (UNEP) in support of the third edition of the Global Biodiversity Outlook (GBO-3). That report highlighted the declining status of regional biodiversity and consequent threat to human well-being, calling for innovative reforms and regionally coordinated action to curb these losses.

This second report complements the Fourth Edition of the Global Biodiversity Outlook (GBO-4), and presents current knowledge on status and trends in biodiversity and ecosystem services and their pressures, but also aims to inform the global community about the responses the West Asian region has made towards the *Strategic Plan for Biodiversity 2011-2020*, agreed in Nagoya in 2010, and the associated Aichi Biodiversity Targets. Nations within the West Asia region have recognized the importance of biodiversity for food security, economic growth and sustainable development.

The countries in the region have mobilized concerted action to conserve biodiversity, despite the serious challenging issues facing some countries. Regional, national and sub-national initiatives have been already undertaken and are being integrated into national plans, strategies and by-laws. This report aims to show how these efforts have helped to conserve biodiversity and ecosystems, and at the same time contributed to poverty eradication and sustainable development at the national and regional levels. The report synthesizes existing material and also includes some new analyses. It also provides a contribution to the suite of regional assessments being developed under the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) and to the forthcoming Sixth Edition of the Global Environmental Outlook (UNEP GEO-6).

Responding to the opportunities and challenges ahead in the West Asia region requires collaborative efforts across governments and many stakeholders. UNEP has a significant role to play in catalysing such action and addressing the many challenges identified in this report within West Asia, through stimulating transboundary action and collaborative effort across the region, building capacity within governments and organizations active in sustainable development in the region, fostering innovation, piloting new ideas and encouraging the mobilization of resources. It also supports planning for biodiversity through updating national biodiversity strategies and actions plans, and facilitates policy coherence and mainstreaming of biodiversity within and across sectors.

Iyad Abumoghli

Regional Director, United Nations Environment Programme – Regional Office for West Asia

Braulio Ferreira de Souza Dias

Executive Secretary, Convention on Biological Diversity

1. EXECUTIVE SUMMARY

Global Biodiversity Outlook-4 (GBO-4), the mid-term review of the *Strategic Plan for Biodiversity 2011-2020*, published by the Secretariat of the Convention on Biological Diversity (SCBD), provides a global assessment of progress towards the attainment of the Plan's biodiversity goals and associated twenty Aichi Biodiversity Targets, but contains limited regional information. This second edition of the State of Biodiversity in West Asia report builds on and complements the global GBO-4 assessment, serving as a near mid-term review of progress towards the *Strategic Plan for Biodiversity 2011-2020* for the West Asia region specifically.

This report draws on a set of regional indicators, information from fifth national reports to the Convention on Biological Diversity (CBD), other government reports, case studies and published literature, to provide a target by target review of progress towards the twenty Aichi Biodiversity Targets. As much as possible, global indicators for the Aichi Biodiversity Targets have been broken down to regional level and additional analyses of existing global information have been undertaken.

Tracking regional progress can help identify where regional effort is most needed to enhance and accelerate progress towards attainment of goals. Responding to the opportunities and challenges requires collaborative effort; this report has been produced to help inform regional dialogue across national governments and stakeholders throughout West Asia and promote co-operation and action, especially through legal and policy frameworks at the regional scale.

The key messages about the state of biodiversity in West Asia, and the pressures upon it, which have emerged from this assessment are:

- Available biodiversity and ecosystem service information for the region is limited, which has made the reporting task challenging, and in many cases data are too poor and fragmentary to allow robust conclusions.
- The major drivers of biodiversity decline have seen a rapid increase, including urban expansion, the spread of intensive agricultural systems and cultivation of marginal land resulting from considerable population growth. Such changes necessitate reliance on resources imported from elsewhere in the world, meaning that West Asia's ecological footprint is growing sharply and now exceeds the global average.
- The volatile political situation in parts of the region means conservation work has been unable to proceed in the countries or areas experiencing significant internal and international conflicts and political instability in recent years.
- Protected areas networks in West Asia are limited in both coverage and management effectiveness.
- Wildlife crime linked to hunting is a continuing problem with ineffective enforcement of regulations and legislation.
- Water scarcity, driven by rapidly rising demand, is threatening the survival of the region's wetland habitats.
- Multiple anthropogenic and climatic pressures are interacting to threaten the integrity of marine ecosystems.
- The region is likely to be one of the hardest hit by the direct and indirect impacts of climate change such as sea level rise, sea temperature rise, increasing water scarcity and ground water salinity, and desertification.

Nonetheless the report identifies a number of important responses and actions which have taken place since 2011.

- In the past five years the main response in West Asia has been to invest considerable effort in building capacity, and putting in place policy and institutional frameworks to support biodiversity conservation.
- In particular, the implementation of Multilateral Environmental Agreements (MEAs) has been greatly strengthened in the region.
- Technical support to CBD Parties (both eligible and ineligible for funding from the Global Environment Facility (GEF)) has been growing especially from non-funded Gulf countries in the preparation and revision of National Biodiversity Strategies and Action Plans (NBSAPs).

Overall progress towards the achievement of the twenty Aichi Biodiversity Targets in the West Asia region's countries versus globally has been difficult to assess due to lack of data. A dashboard of progress towards each of the targets has been developed using the same icons of progress developed for the GBO-4 report, based on assessment of available information. Case studies have been extensively used as an alternative way of illustrating progress towards the Aichi Biodiversity Targets. These show some encouraging advancements in the field of biodiversity conservation, awareness and mainstreaming into decision making processes within West Asia.

Looking to the future, a number of opportunities and recommendations are proposed:

- Improve data availability to reduce scientific uncertainty on biodiversity trends.
- Complete national and regional ecosystem assessments to allow addressing of key questions about the state of biodiversity and ecosystems and the policy options open to better protection and management.
- Invest in raising public awareness.
- Pursue integrated resource management since many of the case studies have demonstrated that one action, initiative or project can generate a number of beneficial outcomes for biodiversity and ecosystem services.
- Further enhance regional cooperation to overcome shared environmental problems.
- Mainstream biodiversity across government sectors so that considerations of biodiversity become a part of daily decision making in ministries of finance, agriculture and infrastructure, as well as in various other sectors, such as tourism and education, in West Asia.
- Strengthen protected areas networks especially within the marine and coastal environments where pressures are many and complex.
- Enhance the implementation of biodiversity-related conventions to build institutional capacity.
- Increase available resources for biodiversity given the considerable potential within this region to mobilize funds from private business, national governments and global funding mechanisms.

1. RÉSUMÉ

La quatrième édition des Perspectives mondiales de la diversité biologique (GBO-4), évaluation à mi-parcours du *Plan stratégique pour la biodiversité 2011-2020*, fournit une évaluation globale des progrès accomplis vers la réalisation des objectifs du Plan stratégique pour la biodiversité et des Objectifs d'Aichi associés, mais contient des informations régionales limitées. Ce rapport s'appuie sur et complète l'évaluation du GBO-4. Il s'agit de la deuxième édition de *L'état de la biodiversité en Asie de l'Ouest*. Il constitue une évaluation à (quasiment) mi-parcours des progrès accomplis vers le *Plan stratégique pour la biodiversité 2011-2020* pour la région Asie de l'Ouest.

Le présent rapport a été élaboré à partir d'un ensemble d'indicateurs régionaux, d'informations émanant des cinquièmes rapports nationaux présentés par les Parties à la Convention sur la diversité biologique (CBD) et d'autres rapports gouvernementaux, d'études de cas et autres publications, afin de fournir un examen, objectif par objectif, des progrès accomplis vers la réalisation des vingt Objectifs d'Aichi pour la biodiversité. Dans la mesure du possible, les indicateurs mondiaux pour les Objectifs d'Aichi ont été désagrégés à l'échelle régionale et des analyses supplémentaires de l'information globale existante ont été entreprises.

Le suivi des progrès à l'échelle régionale peut aider à identifier là où les efforts régionaux sont les plus nécessaires afin d'améliorer et d'accélérer les progrès vers la réalisation des objectifs. La réponse face aux opportunités et aux défis exige un effort de collaboration, et ce rapport a été produit pour aider à informer le dialogue régional entre les gouvernements nationaux et de nombreuses parties prenantes dans toute la région Asie de l'Ouest, et pour promouvoir la coopération et les actions à travers des cadres juridiques et politiques à l'échelle régionale.

Les messages clés ayant émergé de cette évaluation de l'état de la biodiversité en Asie de l'Ouest et des pressions qu'elle subit sont les suivants:

- L'information disponible sur la biodiversité et les services fournis par les écosystèmes pour la région est limitée, ce qui a rendu l'élaboration des rapports difficile, et dans de nombreux cas, les données sont trop insuffisantes et fragmentées pour permettre des conclusions solides.
- Les principaux facteurs de déclin de la biodiversité ont vu une augmentation rapide, notamment l'expansion urbaine, la propagation des systèmes agricoles intensifs et la culture des terres marginales résultant de la croissance démographique rapide. Ces changements nécessitent le recours à des ressources importées d'ailleurs dans le monde, ce qui signifie que l'empreinte écologique de l'Asie de l'Ouest est en forte croissance et dépasse maintenant la moyenne mondiale.
- La situation politique volatile dans certaines parties de la région a limité la progression des travaux de conservation dans les pays ou les régions qui connaissent des conflits internes et internationaux importants et une instabilité politique depuis ces dernières années.
- Les réseaux d'aires protégées en Asie de l'Ouest sont limités à la fois en termes de couverture et d'efficacité de gestion.
- Les crimes contre la faune liés à la chasse sont un problème persistant avec une application inefficace des lois et règlements.
- La pénurie d'eau, entraînée par l'augmentation rapide de la demande, menace la survie des habitats des zones humides de la région.
- Les multiples pressions anthropiques et climatiques interagissent et menacent l'intégrité des écosystèmes marins.
- La région est susceptible d'être l'une des plus durement touchées par les impacts directs et indirects du changement climatique tels que les pénuries d'eau et la salinité des eaux souterraines, et la désertification.

Néanmoins, le rapport identifie un certain nombre d'interventions importantes qui ont eu lieu depuis 2011:

- Au cours des cinq dernières années, la principale réponse en Asie de l'Ouest a été d'investir des efforts considérables dans le renforcement des capacités, et de mettre en place des cadres politiques et institutionnels pour soutenir la conservation de la biodiversité.
- En particulier, la mise en œuvre des accords environnementaux multilatéraux (AEM) a été considérablement renforcée dans la région.
- L'appui technique aux Parties à la CDB (admissibles et non admissibles au FEM) n'a cessé de croître, en particulier en provenance de pays non financés du Golfe dans la préparation et la révision des stratégies et plans d'action nationaux (SPANB).

Globalement, les progrès vers la réalisation des vingt Objectifs d'Aichi dans les pays de la région Asie de l'Ouest sont difficiles à évaluer par rapport aux tendances mondiales en raison du manque de données. Un tableau de bord des progrès accomplis vers chacun des objectifs a été développé pour le rapportage, utilisant les mêmes icônes de progrès mis au point pour le rapport GBO-4, et basé sur une évaluation des informations disponibles. Des études de cas ont été largement utilisées comme un moyen alternatif pour illustrer les progrès réalisés vers les Objectifs d'Aichi. Ceux-ci montrent des progrès encourageants dans le domaine de la conservation de la biodiversité, de la sensibilisation et de l'intégration dans les processus de prise de décision au sein de l'Asie de l'Ouest.

De manière prospective, un certain nombre de possibilités et recommandations sont proposées:

- Améliorer la disponibilité des données pour réduire l'incertitude scientifique sur les tendances de la biodiversité.
- Effectuer des évaluations écosystémiques nationales et régionales pour permettre de traiter certaines questions clés sur l'état de la biodiversité et des écosystèmes, et afin d'ouvrir les options politiques vers une meilleure protection et une meilleure gestion.
- Investir dans la sensibilisation du public.
- Poursuivre la gestion intégrée des ressources, puisque la plupart des études de cas ont démontré qu'une seule action, initiative ou un projet peuvent générer un certain nombre de résultats bénéfiques pour les services écosystémiques et la biodiversité.
- Améliorer la coopération régionale pour résoudre les problèmes environnementaux communs.
- Intégrer ('mainstream') la biodiversité dans tous les secteurs du gouvernement afin que les considérations sur la biodiversité fasse partie de la prise de décision quotidienne dans les ministères des finances, de l'agriculture et des infrastructures, ainsi que dans d'autres secteurs divers, comme le tourisme et l'éducation, en Asie de l'Ouest.
- Renforcer les réseaux d'aires protégées, en particulier dans les environnements marins et côtiers où les pressions sont nombreuses et complexes.
- Améliorer la mise en œuvre des conventions relatives à la biodiversité pour renforcer les capacités institutionnelles.
- Augmenter les ressources disponibles pour la biodiversité étant donné le potentiel considérable au sein de cette région pour mobiliser des ressources du secteur privé, des gouvernements nationaux et des fonds mondiaux.

1. RESUMEN EJECUTIVO

La Perspectiva Mundial sobre la Diversidad Biológica 4 (GBO-4, por sus siglas en Inglés), una revisión a medio plazo sobre los avances en la implementación del *Plan Estratégico para la Diversidad Biológica 2011-2020*, facilitó una perspectiva global sobre el progreso hacia los objetivos sobre biodiversidad del Plan y las Metas de Aichi para la Diversidad Biológica asociadas, pero su contenido regional es limitado. Esta segunda edición del informe del *Estado de la Biodiversidad en Asia Occidental* se basa en y refuerza el análisis realizado en el GBO-4, sirviendo como una revisión cercana a la mitad del plazo sobre progreso hacia el *Plan Estratégico para la Diversidad Biológica 2011-2020* para la región de Asia Occidental.

Este informe se basa en una serie de indicadores regionales, información sobre los quintos informes nacionales al Convenio sobre la Diversidad Biológica (CDB), otros informes gubernamentales, casos de estudio y literatura publicada, para aportar una revisión meta a meta del progreso hacia las veinte metas. En la medida de lo posible, los indicadores globales para las Metas de Aichi para la Diversidad Biológica han sido desglosados al nivel regional, realizándose análisis adicionales de información global existente.

El seguimiento del progreso regional puede ayudar a identificar donde esfuerzos regionales y nacionales son más necesarios para incrementar y acelerar el progreso para alcanzar las Metas de Aichi de Biodiversidad. Responder a las oportunidades y retos requiere un esfuerzo colaborativo; este informe ha sido producido para contribuir con información que ayude al diálogo regional a través de gobiernos nacionales y partes interesadas en Asia Occidental, y para promocionar la cooperación y acciones relacionadas, especialmente a través de esquemas legales y políticos a nivel regional.

Los siguientes mensajes clave sobre el estado de la biodiversidad en Asia Occidental, y las presiones sobre ella, surgen de este análisis:

- La información disponible sobre biodiversidad y servicios ecosistémicos en la región es limitada lo cual ha hecho difícil la presentación del informe, y en muchos casos los datos son demasiado escasos o fragmentados como para permitir conclusiones rigurosas.
- Los principales causantes del declive de biodiversidad han aumentado rápidamente, incluyendo la expansión urbana, la propagación de sistemas de agricultura intensiva y el cultivo de tierras marginales debidos al crecimiento de la población. Estos cambios crean una dependencia sobre recursos importados de otros lugares, lo cual significa que la huella ecológica de Asia Occidental está aumentando fuertemente y actualmente sobrepasa la media global.
- La volátil situación política existente en partes de la región implica que no se pudo dar continuidad al trabajo de conservación en países o zonas con conflicto internacional o interno e inestabilidad política en los últimos años.
- Las redes de áreas protegidas en Asia Occidental son limitadas, tanto en su cobertura como en la eficacia de su gestión.
- El crimen ligado a la caza ilegal continúa siendo un problema, y la observancia de la regulación y leyes es inefectiva.
- La escasez de agua, causada por un fuerte incremento en la demanda, está amenazando la supervivencia de los humedales en la región.
- Múltiples presiones antropogénicas y climáticas están amenazando la integridad de los ecosistemas marinos.
- Es probable que la región sea una de las más afectadas por los impactos directos e indirectos del cambio climático, debido a sus características geográficas, topográficas y la distribución de su población.

De todas formas, el informe identifica un número de acciones y respuestas importantes que han sido llevadas a cabo desde el 2011:

- En los últimos cinco años la mayor respuesta en Asia Occidental ha sido invertir esfuerzos en el desarrollo de capacidades, y la creación de esquemas políticos e institucionales para apoyar la conservación de la biodiversidad.
- En particular, la implementación de Acuerdos Medioambientales Multilaterales (MEAs, por sus siglas en Inglés) ha sido significativamente reforzada en la región.
- El apoyo técnico a las Partes del CDB ha crecido (tanto para los elegibles como los que no son elegibles para el FMAM) especialmente de países del Golfo que no reciben apoyo financiero en la preparación y revisión de sus Estrategias y planes de acción nacionales en materia de diversidad biológica (EPANDBs).

En general, el progreso hacia el logro de las veinte Metas de Aichi para la diversidad biológica en Asia Occidental, en comparación con el panorama global, ha sido difícil de analizar debido a la falta de datos.

Un esquema de progreso hacia cada una de las metas ha sido desarrollado para el informe utilizando los mismos iconos de progreso diseñados para el informe GBO-4, basándose en análisis de la información disponible. Casos de estudio han sido ampliamente utilizados como una alternativa para ilustrar el progreso hacia las metas. Éstos muestran algunos avances positivos en lo relativo a la conservación de la biodiversidad, la concienciación y la integración de la biodiversidad en los procesos de toma de decisiones dentro de Asia Occidental.

De cara hacia el futuro, diversas oportunidades y recomendaciones se proponen a continuación:

- Mejorar la disponibilidad de datos para reducir la incertidumbre científica sobre las tendencias de la biodiversidad.
- Realizar evaluaciones de los ecosistemas a nivel nacional y regional para permitir el estudio de preguntas clave sobre el estado de la biodiversidad y los ecosistemas, y ampliar las opciones de política para una mejor protección y gestión.
- Invertir en incrementar la conciencia del público en general sobre los valores de la biodiversidad.
- Llevar a cabo una gestión integrada de los recursos, ya que muchos casos de estudio demuestran que una acción, iniciativa o proyecto puede generar varios beneficios para la biodiversidad y los servicios ecosistémicos.
- Continuar con el fortalecimiento de la cooperación regional para afrontar problemas ambientales comunes.
- Integrar la biodiversidad a lo largo de los diferentes sectores de gobierno para que la consideración de la misma sea parte de la toma de decisiones que se realiza diariamente en los ministerios de finanzas, agricultura e infraestructura, así como en otros sectores, como ser turismo y educación.
- Reforzar las redes de áreas protegidas, especialmente en ecosistemas marinos y costeros donde las presiones son muchas y complejas.
- Reforzar la capacidad institucional para mejorar la implementación de las convenciones relacionadas con la biodiversidad.
- Aumentar los recursos disponibles para la biodiversidad debido al potencial considerable que existe dentro de la región para movilizar recursos de empresas privadas, gobiernos nacionales y fondos mundiales.

1. РЕЗЮМЕ

В четвертом издании «Глобальной перспективы в области биоразнообразия», промежуточном обзоре *Стратегического плана в области сохранения и устойчивого использования биоразнообразия на 2011-2020 годы*, приводится глобальная оценка прогресса в достижении предусмотренных Планом глобальных целей в области биоразнообразия и выполнении соответствующих двадцати целевых задач по сохранению и устойчивому использованию биоразнообразия, принятых в Айти, однако региональная информация содержится там в ограниченном объеме. Настоящее второе издание доклада «Состояние биоразнообразия в Западной Азии» основывается на глобальной оценке, приведенной в ГПОБ-4, и дополняет ее, выступая в качестве промежуточного обзора прогресса в осуществлении *Стратегического плана в области сохранения и устойчивого использования биоразнообразия на 2011-2020 годы* для региона Западной Азии.

В настоящем докладе используются набор региональных индикаторов, информация из пяти национальных докладов в рамках Конвенции о биологическом разнообразии (КБР), других правительственных докладов, тематических исследований и опубликованной литературы с целью проведения анализа хода достижения каждой из двадцати Айтинских целевых задач в области биоразнообразия. По мере возможности глобальные индикаторы по Айтинским целевым задачам были представлены в разбивке по регионам; при этом был проведен дополнительный анализ существующей глобальной информации.

Отслеживание прогресса на региональном уровне может способствовать выявлению тех областей, в которых наиболее востребованы региональные меры по активизации и ускорению хода работы по достижению целей. Реагирование на возможности и проблемы требует совместных усилий; настоящий доклад был подготовлен в целях обеспечения информационной поддержки регионального диалога между национальными правительствами и заинтересованными сторонами во всей Западной Азии, а также в целях содействия сотрудничеству и проведению практических мероприятий, особенно посредством установления правовых и политических рамок на региональном уровне.

Ниже приводятся полученные в результате этой оценки основные выводы о состоянии биоразнообразия в Западной Азии и воздействующих на него нагрузках:

- Доступная информация о биоразнообразии и экосистемных услугах в регионе носит ограниченный характер, что затрудняет задачу представления отчетности; при этом во многих случаях данные являются слишком скудными и разрозненными, не позволяя делать обоснованные выводы.

- Наблюдается быстрое усиление основных факторов сокращения биоразнообразия, включая рост городов, распространение систем интенсивного сельскохозяйственного производства и возделывание маргинальных земель в результате быстрого роста численности населения. Такие изменения неизбежно влекут за собой зависимость от ресурсов, импортируемых из других регионов мира, а это означает, что экологический след Западной Азии растет быстрыми темпами и в настоящее время превышает среднемировой показатель.
- Нестабильная политическая обстановка в некоторых частях региона означает невозможность проведения природоохранной работы в странах или районах, переживающих в последние годы значительные внутренние и международные конфликты и политическую нестабильность.
- Сети охраняемых районов в Западной Африке носят ограниченный характер как в плане охвата, так и с точки зрения эффективности управления.
- Ввиду неэффективного обеспечения соблюдения нормативных актов и законодательства, сохраняется проблема преступлений против живой природы, связанных с охотой.
- Нехватка воды, вызываемая быстрым ростом спроса, ставит под угрозу существование водно-болотных местообитаний в регионе.
- Различные антропогенные и климатические нагрузки налагаются друг на друга, ставя под угрозу целостность морских экосистем.

- Регион, вероятно, является одним из наиболее пострадавших от прямых и косвенных последствий изменения климата, таких как рост нехватки воды и повышение солености грунтовых вод, а также опустынивание.

Несмотря на это, в докладе определен ряд важных ответных мер и действий, которые осуществляются с 2011 года:

- В последние пять лет основной ответной мерой в Западной Азии было направление значительных усилий в укрепление потенциала и создание политических и институциональных рамок для обеспечения сохранения биоразнообразия.
- В частности, в регионе значительно усилилась работа по реализации Многосторонних природоохранных соглашений (МПС).
- Растет объем технической помощи государствам-участникам КБР (как имеющим право на получение помощи ГЭФ, так и не имеющим его), особенно со стороны нефинансируемых стран Персидского залива в подготовке и пересмотре Национальных стратегий и планов действий по сохранению биоразнообразия (НСПДСБ).

Общий прогресс в выполнении двадцати Айтинских целевых задач в области биоразнообразия в странах региона Западной Азии по сравнению с общемировым показателем с трудом поддается оценке ввиду отсутствия данных.

Для этого доклада была разработана информационная панель, показывающая ход выполнения каждой из целевых задач, исходя из оценки доступной информации, с использованием таких же пиктограмм прогресса, как те, которые были разработаны для доклада ГПОБ-4. Широко использовались тематические исследования в качестве альтернативного способа демонстрации хода выполнения двадцати Айтинских целевых задач в области биоразнообразия. Эти исследования свидетельствуют об определенных обнадеживающих успехах в области сохранения биоразнообразия, повышения осведомленности о биоразнообразии и включения соответствующих вопросов в процессы принятия решений в странах Западной Азии.

На будущее предлагается ряд возможностей и рекомендаций:

- Повышение доступности данных с целью уменьшения научной неопределенности в отношении тенденций в области биоразнообразия.
- Завершение национальных и региональных оценок экосистем с целью обеспечения возможности решения ключевых вопросов о состоянии биоразнообразия и экосистем, а также создания возможностей для проведения вариантов политики, способствующих улучшению охраны и управления.
- Инвестиции в повышение осведомленности общественности.
- Применение комплексного управления ресурсами, поскольку многие тематические исследования показывают, что одно мероприятие, инициатива или проект могут обеспечить ряд положительных конечных результатов для биоразнообразия и экосистемных услуг.
- Дальнейшее развитие регионального сотрудничества с целью преодоления общих экологических проблем.
- Включение вопросов биоразнообразия в основную деятельность различных секторов правительства, с тем чтобы соображения биоразнообразия стали частью повседневного принятия решений в министерствах финансов, сельского хозяйства и инфраструктуры, а также в различных других секторах, таких как туризм и образование, в Западной Азии.
- Укрепление сетей охраняемых районов, особенно в морской и прибрежной среде, где действуют многочисленные нагрузки, носящие сложный характер.
- Повышение эффективности реализации конвенций, касающихся биоразнообразия, с целью укрепления институционального потенциала.

Увеличение доступных ресурсов для сохранения биоразнообразия с учетом существующего в этом регионе значительного потенциала для мобилизации ресурсов частных предприятий, национальных правительств и глобальных фондов.

- ومع ذلك فإن هذا التقرير يشير إلى عدد من حالات الاستجابة الهامة التي حدثت منذ عام 2011:
- في السنوات الخمس الأخيرة كانت حالة الاستجابة الرئيسية في منطقة غرب آسيا هي عبارة عن استثمار الجهود الحثيثة في بناء القدرات ووضع الأطر المؤسسية والسياسية في موضع دعم صون التنوع البيولوجي.
 - على وجه الخصوص، إن تنفيذ الاتفاقيات البيئية المتعددة الأطراف (MEAs) كان قد تعزز بشكل كبير في المنطقة.
 - زاد الدعم الفني لأطراف الاتفاقية المتعلقة بالتنوع البيولوجي (CBD) (سواء كان مرفق البيئة العالمي (GEF) مؤهل أم غير مؤهل) وبالأخص من بلدان الخليج الغير مُمولة في إعداد ومراجعة استراتيجيات وخطط العمل الوطنية للتنوع البيولوجي (NBSAPs).
- إنه من الصعوبة تقييم تقدم سير العمل بشكل عام نحو تحقيق أهداف أيشي للتنوع البيولوجي العشرين في دول منطقة غرب آسيا مقارنة ببقية العالم وذلك يعود لنقص البيانات.
- وقد تم تطوير منظومة قياس تقدم سير العمل نحو كل هدف من الأهداف من أجل التقرير مستخدمين نفس رموز تقدم سير العمل التي تم تطويرها من أجل تقرير نشرة التوقعات للتنوع البيولوجي العالمي - الإصدار الرابع (GBO-4) بالاعتماد على التقييم المُستخلص من المعلومات المتوفرة. وقد تم استخدام الحالات القيد الدراسة بشكل كبير كطريقة بديلة لعرض تقدم سير العمل نحو أهداف أيشي للتنوع البيولوجي. وهذه الحالات تُبين بعض خطوات التقدم الجريئة في مجال صون التنوع البيولوجي ونشر الوعي والتضمين في عمليات صنع القرارات ضمن منطقة غرب آسيا.
- وبالنظر إلى المستقبل، يتم اقتراح عدد من الفرص والتوصيات:
 - تحسين وفرة البيانات بغية تخفيض الإبهام العلمي بخصوص اتجاهات التنوع البيولوجي.
 - إتمام التقييمات الوطنية والإقليمية للنظام البيئي للسماح بالإجابة على الأسئلة الأساسية حول وضع التنوع البيولوجي والأنظمة البيئية، وإتاحة خيارات سياسية من أجل حماية وإدارة أفضل.
 - الاستثمار في زيادة نشر الوعي العام.
 - متابعة إدارة متكاملة للموارد، حيث أن العديد من الحالات القيد الدراسة كانت قد أثبتت أن عمل واحد أو مبادرة أو مشروع يمكنه أن يُؤد نتائج مفيدة لخدمات التنوع البيولوجي والأنظمة البيئية.
 - زيادة تعزيز التعاون الإقليمي للتغلب على المشاكل البيئية المشتركة.
 - تضمين التنوع البيولوجي عبر القطاعات الحكومية وبذلك تكون اعتبارات التنوع البيولوجي جزءاً من عملية صنع القرار اليومية في وزارات المالية والزراعة والبنى التحتية، بالإضافة إلى العديد من القطاعات الأخرى مثل السياحة والتعليم في غرب آسيا.
 - تقوية شبكات المناطق المحمية وبالأخص تلك التي في البيئات البحرية والساحلية حيث تكون الضغوطات عديدة ومعقدة.
 - تعزيز تنفيذ الاتفاقيات المتعلقة بالتنوع البيولوجي من أجل بناء قدرات مؤسسية.
 - زيادة الموارد المتاحة للتنوع البيولوجي نظراً للامكانيات الكبيرة ضمن هذه المنطقة من أجل تسخير الموارد من قطاع الأعمال الخاص والحكومات الوطنية والصناديق العالمية.

1. ملخص تنفيذي

نشرة التوقعات للتنوع البيولوجي العالمي - الإصدار الرابع، تقدم المراجعة النصف سنوية للخطة الاستراتيجية للتنوع البيولوجي للفترة 2011 - 2020 تقييم عالمي لسير العمل نحو تحقيق أهداف الخطة للتنوع البيولوجي العالمي المرتبطة مع أهداف أيشي العشرين للتنوع البيولوجي، ولكنها تتضمن معلومات إقليمية محدودة، وهذا التقرير هو النسخة الثانية من تقرير وضع التنوع البيولوجي لغرب آسيا ويستند على التقييم العالمي لنشرة التوقعات للتنوع البيولوجي العالمي - الإصدار الرابع (GBO-4) ويتممه، حيث يُعتبر بمثابة مراجعة نصف سنوية لتقديم سير العمل نحو الخطة الاستراتيجية للتنوع البيولوجي للفترة 2011 - 2020 في منطقة غرب آسيا.

إن العبر الرئيسية المستوحاة حول وضع التنوع البيولوجي في منطقة غرب آسيا والضغوطات التي يتعرض لها والمستخلصة من هذا التقييم هي:

- محدودية المعلومات المتاحة حول خدمات التنوع الإحيائي والأنظمة البيئية للمنطقة؛ الشيء الذي جعل من مهمة إصدار التقارير أمراً صعباً، ففي عدة حالات تكون البيانات ضئيلة ومجزأة لا تسمح بالقيام باستنتاجات حاسمة.
- الازدياد السريع للعوامل الرئيسية المسببة لتناقص التنوع البيولوجي، بما يتضمن ذلك التوسع العمراني وانتشار أنظمة الزراعة المكثفة وزراعة الأراضي الهامشية الناتجة عن ازدياد النمو السكاني السريع. وتستدعي مثل هذه التغيرات الاعتماد على الموارد المستوردة من أماكن أخرى في العالم، الأمر الذي يعني أن الآثار البيئية لمنطقة غرب آسيا تنمو بشكل حاد وتتجاوز الآن المعدل العالمي.
- إن الوضع السياسي المتقلب في عدة أماكن في المنطقة يعني أن أعمال الصون لا يمكنها أن تتقدم في الدول أو المناطق التي تعاني من نزاعات داخلية ودولية هامة ومن اضطرابات سياسية في السنوات الأخيرة.
- محدودية الشبكات المحمية في منطقة غرب آسيا فيما يتعلق بكل من التغطية وفعالية الإدارة.
- تُشكّل جرائم الحياة البرية المرتبطة بالصيد مشاكل مستمرة والتي سببها التنفيذ والتطبيق الغير فعال للأنظمة والتشريعات.
- إن ندرة المياه الناجمة عن الطلب المتزايد والسريع تُهدّد بقاء موائل الأراضي الرطبة في المنطقة.
- إن الضغوط البشرية والمناخية المتعددة تتفاعل لتهدد تكامل الأنظمة البيئية البحرية.
- إن هذه المنطقة تُعتبر على الأرجح واحدة من أكثر المناطق المتضررة بسبب الآثار السلبية المباشرة وغير المباشرة للتغير المناخي مثل ازدياد ندرة المياه وملوحة المياه الجوفية والتصحر.

يعتمد هذا التقرير على مجموعة من المؤشرات الإقليمية وعلى المعلومات الواردة في التقارير الوطنية الخامسة حول الاتفاقية المتعلقة بالتنوع البيولوجي (CBD) والتقارير الحكومية الأخرى والحالات القيد الدراسة والكتابات المنشورة، وذلك بغية تأمين مراجعة لكل هدف على حدى لتقدم سير العمل نحو تحقيق أهداف أيشي العشرين للتنوع البيولوجي. ولقد تم قدر المستطاع تقسيم المؤشرات العالمية لأهداف أيشي إلى المستوى الإقليمي، كما تم إجراء بعض التحليلات الإضافية للمعلومات العالمية المتاحة.

إن تتبع تقدم سير الأعمال الإقليمية يساعد على تحديد المواضيع التي تحتاج أكثر من غيرها إلى جهود إقليمية إضافية لتعزيز وتسريع تحقيقها. إن الاستجابة للفرص والتحديات تتطلب جهوداً جماعية، لذا فقد تم إعداد هذا التقرير للمساعدة في تأمين المعلومات للنقاش الإقليمي الدائر بين الحكومات الوطنية والأطراف ذات المصلحة في منطقة غرب آسيا، وأيضاً لتشجيع التعاون والعمل المشترك وبالأخص عبر الأطر الرسمية والسياسية على المستوى الإقليمي.

1. 执行摘要

第四版《全球生物多样性展望》是对执行《2011-2020年生物多样性战略计划》所取得进展的中期评估，提供了对实现该计划中的生物多样性目标和与之相关的20项“爱知生物多样性目标”所取得进展的全球评估，但包含的区域信息有限。这是第二版《西亚生物多样性状况》报告，它建立在全球第四版《全球生物多样性展望》评估基础之上，也是对实现西亚地区的《2011-2020年生物多样性战略计划》目标所取得进展的近中期评估。

本报告借鉴了来自《生物多样性公约》（CBD）第五次国家报告、其他政府报告、案例研究和已发表文献的一套区域指标和信息，逐个审查了实现20个“爱知生物多样性目标”取得的进展。本报告尽可能地把“爱知目标”的全球性指标分解到区域层面，并对现有的全球信息进行了额外分析。

应对机遇和挑战需要协同努力，而编制本报告有助于为西亚各国政府和利益相关方的区域对话提供依据，特别是通过区域规模的法律和政策框架促进合作和行动。

本次评估得出的有关西亚的生物多样性状况及其所面临压力的关键信息是：

- 该地区现有的生物多样性和生态系统服务信息有限，这使报告任务充满挑战，且在很多情况下，数据非常零散和有限，难以得出可靠的结论。
- 导致生物多样性下降的主要驱动因素出现了快速增长。这种变化需要依赖于从世界其他地方进口的资源，这意味着西亚的生态足迹正在急剧增长，目前已超过了全球平均水平。
- 西亚部分区域的动荡政局意味着保护工作在近年正在经历重大国内、国际冲突和政治动荡的国家中无法继续进行。
- 西亚的保护区网络的覆盖范围和管理有效性有限。
- 与狩猎有关的野生动物犯罪问题由于立法执法不力而持续存在。
- 由于需求快速上升导致的水资源匮乏正在威胁该地区的湿地栖息地的生存。
- 多重的人为和气候压力正在相互作用，对海洋生态系统的完整性构成了威胁。
- 该地区很可能成为遭受气候变化的直接和间接影响（例如水资源日益匮乏、地下水矿化以及荒漠化）打击的重灾区之一。

尽管如此，本报告梳理出了一些自2011年以来已经采取的重要对策和行动：

- 在过去五年中，西亚的主要应对措施是在能力建设方面投入相当大的努力，并把政策和体制框架落实到位，以支持生物多样性保护。
- 尤其是多边环境协定（MEA）的实施在该区域得到了极大的加强。
- 对《生物多样性公约》（CBD）成员国的技术支持（包括符合和不符合全球环境基金要求的成员国）一直在增加。特别是没有资金支持的海湾国家对编制和修订其《国家生物多样性战略和行动计划》（NBSAP）的支持一直在增加。

由于缺乏数据，很难将西亚地区各国实现“爱知生物多样性”20个目标的总体进展与全球进行对比评估。

在评估可用信息的基础上，开发了衡量实现每个目标进展情况的“仪表板”，“仪表板”使用了和第四版《全球生物多样性展望》报告相同的进展图标。案例研究已被广泛用作说明实现“爱知生物多样性目标”进展的另一种方式。它们表明在西亚的生物多样性保护、对生物多样性保护的认识和使之在决策领域获得多数人的认可等方面出现了一些鼓舞人心的进展。

展望未来，本报告提出了许多机会和建议：

- 以降低生物多样性趋势的科学不确定性。
- 完成国家和区域生态系统评估，以便使涉及生物多样性和生态系统状况的重点问题得以解决，并提供政策选择，以更好地进行保护和管理。
- 寻求综合资源管理，因为许多案例研究已经证明一项措施、行动或项目会给生物多样性和生态系统服务带来若干有益成果。
- 进一步加强区域合作，以克服共同的环境问题。
- 使生物多样性被各个政府部门的多数人接受，以便金融、农业和基础设施部门，以及其他各行各业，如旅游，教育等在日常决策中考虑生物多样性。
- 加强保护区网络，尤其是面临众多复杂压力的海洋和沿海环境中的网络。
- 加强与生物多样性有关的公约的执行，以建设制度能力。

2. KEY MESSAGES ABOUT THE STATE OF BIODIVERSITY IN WEST ASIA

STATE

The West Asia region (Figure 1) contains a number of globally important biodiversity features. Some wetlands support large populations of resident birds, as well as transient bird species on migration between Europe, Central Asia and Africa. The region also contains remnant populations of desert specialist antelopes and bird species, which are being re-introduced in some countries. The marine habitats support coral reefs and dugong populations of global importance, and the Mediterranean coasts in the west contain areas with high humidity and high levels of plant endemism, similar to other parts of the Mediterranean basin.

This report summarises available data on the region, but the limited biodiversity and ecosystem services information available has made the analysis of progress challenging. The available data on species, from the International Union for Conservation of Nature (IUCN) Red List, and for forest habitats, suggests a decline in biodiversity values, but data are too poor and fragmentary to draw robust conclusions.

PRESSURES

The West Asia region contains a number of countries that have experienced significant internal and international conflicts and political instability in recent years, with wars and insurgencies still on-going in a number of countries. These conflicts have resulted in the mass movement of people between some of the countries, and out of the region, which has placed considerable pressure on some aspects of ecosystems and natural resources. Elsewhere in the region there is rapid development of large urban areas that are funded by oil and gas industries. These regional dynamics mean that the pressures on biodiversity and natural resources are highly variable, with some areas in war, some with people living traditional subsistence lifestyles and others with huge disposable wealth and rapid urban development.

Increase in major drivers of biodiversity decline

These drivers include rapid urban expansion, the spread of intensive agricultural systems and cultivation of marginal land resulting from rapid population growth. These changes, which rely on the import of resources from elsewhere in the world, mean that West Asia's ecological footprint (both per capita and for the region as a whole) is growing sharply and now exceeds the global average. Substantial resource mobilization is needed for rehabilitation of degraded ecosystems capacity development programmes, technology transfer, assessment of ecosystem services for decision support systems, law enforcement and building new partnerships.



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Variable political situation in the region

In some countries in the region conservation work cannot proceed due to difficult political situations or war. In the Arabian Gulf, where countries are stable, species oriented programmes such those for Saker falcons (*Falco cherrug*) and Arabian oryx (*Oryx leucoryx*), sand cats (*Felis margarita*), jungle cats (*Felis chaus*) and houbara bustards (*Chlamydotis undulata*) draw the majority of interest and funding.

Protected areas networks in West Asia are limited in both coverage and management effectiveness

The protected area estate is limited in the West Asia region and there is a need for further expansion and management of protected areas in many of the countries. Information from the Convention of Biological Diversity (CBD) fifth national reports indicates that progress is insufficient to meet targets on protected areas (Target 11). However, the reports also indicate that governments are working toward designating new protected areas with focus on representation of habitats and species, and improving management effectiveness.

Wildlife crime linked to hunting is a continuing problem with ineffective enforcement of regulations and legislation

At the United Nations Environment Assembly of UNEP (UNEA) meeting in 2014, the Convention on International Trade in Endangered Species (CITES), the Convention on Migratory Species (CMS) and INTERPOL identified wildlife crimes concerning bird, mammal and fish species as threats to biodiversity in the West Asia region. Large mammals and birds are especially vulnerable. For example, the Rift Valley/Red Sea Flyway is the second most important flyway in the world for migratory soaring birds. Annually, over 1.5 million soaring birds, including raptors and storks, migrate from winter grounds in Africa to breeding grounds in Europe and Central Asia and return in summer. As well as major development pressures leading to land use change along the flyway, indiscriminate hunting and illegal killing of birds is also widespread. Illegal fishing methods in the eastern Mediterranean Sea such as the use of poison, dynamite and electrical devices are also commonplace (UNEP 2010).

Water scarcity, driven by rapidly rising demand, is threatening the survival of the region's wetland habitats

Water scarcity has direct impacts on biodiversity by reducing and degrading wetland habitats. Water scarcity in the region creates a need for desalination plants, which have impacts in terms of aquatic creatures being drawn into water plant intakes or affected by highly saline discharges. Increased human use of freshwater has reduced the amount available to maintain the ecological character of many inland water systems. The degradation and loss of inland wetlands and species has been driven by infrastructure development (such as dams, dikes, and levees), land conversion, water withdrawals, pollution, overharvesting, and the introduction of invasive alien species. Already, much of West Asia's freshwater resources are used for irrigation; a reduction in precipitation and higher temperatures from climate change would exacerbate the pressures on food and animal production in the region.

Multiple anthropogenic and climatic pressures are interacting to threaten the integrity of marine ecosystems

The region's marine ecosystems are subject to a complex set of pressures arising out of major urban expansion and land-based development activities focused along narrow coastal corridors. Land reclamation, dredging and pollution activities have direct and indirect impacts on marine ecosystems, including eutrophication, sedimentation and loss of habitat. The impacts are exacerbated by the exploitation of marine fisheries in the region, along with the effects from climate-related hazards such as coral bleaching and rising sea temperatures.

The region is likely to be one of the hardest hit by the direct and indirect impacts of climate change

Those impacts which are most significant for biodiversity include loss of coastal zones due to sea level rise, sea water temperature rise, droughts and desertification, increased water scarcity and ground water salinity (UNEP 2010). Some projections of climate change impacts suggest reduced rainfall (0 to 20 per cent) coupled with higher temperatures, which would decrease water flows in the Euphrates and Jordan rivers, affecting agriculture in the fertile crescent lands (Iraq, Jordan, Lebanon, State of Palestine and Syria).

RESPONSES

In the past five years the main response to biodiversity loss in West Asia has been to invest considerable effort in building capacity and putting in place policy and institutional frameworks to support biodiversity conservation. The region has also become a member

of many international conservation agreements over the past few years and is now seeking ways to implement these agreements. The status of ratification of these international agreements is summarized below:

Table 1: The ratification status of Multi-Lateral Environmental Agreements (MEAs) in West Asia (source: CBD 2014b, 2015a, 2016a; CITES 2015; CMS 2011; ITPGRFA 2015; Ramsar 2013).

Country	CBD (CBD 2015a)	Cartagena Biosafety Protocol (CBD 2014b)	International Treaty on Plant Genetic Resources (ITPGRFA 2015)	CITES (CITES 2015)	CMS (CMS 2011)	Ramsar (Ramsar 2013)	Nagoya Protocol (CBD 2016a)
Bahrain	Ratified	Acceded	-	Acceded	-	Ratified	-
Iraq	Acceded	Acceded	Acceded	Acceded	-	Ratified	-
Jordan	Ratified	Ratified	Ratified	Acceded	Ratified	Ratified	Ratified
Kuwait	Ratified	-	Acceded	Ratified	-	-	-
Lebanon	Ratified	Acceded	Ratified	Acceded	-	Ratified	Signed
Oman	Ratified	Acceded	Acceded	Acceded	-	-	-
Palestine, State of	Acceded	-	-	-	-	-	-
Qatar	Ratified	Acceded	Acceded	Acceded	-	-	-
Saudi Arabia	Acceded	Acceded	Acceded	Acceded	Ratified	-	-
Syria	Ratified	Acceded	Ratified	Acceded	Acceded	Ratified	Acceded
UAE	Ratified	Acceded	Acceded	Acceded	-	Ratified	-
Yemen	Ratified	Acceded	Acceded	Acceded	Ratified	Ratified	-

Strengthening the implementation of MEAs

In the last five years, the implementation of Multi-Lateral Environmental Agreements (MEAs) has been greatly strengthened in the region. This has entailed investment in additional staff and in providing tailored technical assistance to governments through advisory services, policy guidance and capacity building.

Capacity building workshops have been undertaken in collaboration with the Secretariats of the CBD, the CMS, CITES and the Ramsar Convention in collaboration with the League of Arab States (LAS). This has resulted in supportive decisions by the Council of Arab Ministers Responsible for the Environment (CAMRE). Examples are: the Arab Region Statement on Innovative Financial Mechanisms to Implement the *Strategic Plan for Biodiversity 2011-2020*; the Ramsar Muscat Action Plan on Wetlands Conservation and Sustainable Use in the Arab Region, and a statement on the recommendations for ecosystem conservation and restoration in the Arab Region.

Supporting National Biodiversity Strategy and Action Plan (NBSAP) processes

Technical support has been growing to CBD member states (both GEF eligible and non-eligible) in the West Asia region, especially from non-funded Gulf countries. Within the context of NBSAP revisions, the UNEP Regional Office for West Asia (ROWA) mobilized experts as well as specialized agencies to support the NBSAP process and related actions and projects in Iraq, Jordan, Oman, and the United Arab Emirates (UAE). The parties engaged in national and sub-national level consultative processes to mainstream biodiversity across relevant sectors, integrate biodiversity into national development strategies and promote synergies with other biodiversity-related MEAs whilst effectively using guidance from the CBD, GEF and the NBSAP Forum.



3. THE STRATEGIC PLAN FOR BIODIVERSITY 2011-2020 AND ITS REVIEW

The *Strategic Plan for Biodiversity 2011-2020* and its associated Aichi Biodiversity Targets were adopted at the Tenth Conference of the Parties (COP-10) to the CBD in Nagoya, Japan in October 2010. The *Strategic Plan* is comprised of a shared vision, a mission, strategic goals and twenty ambitious yet achievable targets, collectively known as the Aichi Biodiversity Targets. The *Strategic Plan* serves as a flexible framework for the establishment of national and regional targets with the overall aim of saving biodiversity and enhancing its benefits for people (CBD 2010).

Global efforts to assess progress towards the Aichi Biodiversity Targets have already begun. In 2014, GBO-4 (SCBD 2014), and an associated paper in the *Journal Science* (Tittensor et al. 2014), provided a mid-term review of progress towards the Aichi Biodiversity Targets, with a detailed assessment of trends, status, and projections of biodiversity worldwide.



SUMMARY OF THE FINDINGS OF THE GBO-4

GBO-4 brought together multiple lines of evidence derived from a wide range of sources. It drew upon targets, commitments and activities of countries as reported in NBSAPs and national reports, as well as parties' own assessments of progress towards the Aichi Biodiversity Targets. It also took into account information on the status and trends of biodiversity reported by Parties and in the scientific literature, and makes use of indicator-based statistical extrapolations to 2020 (Figure 2) as well as longer term model-based scenarios.

The statistical extrapolations for a range of indicators suggest that, based on current trends, pressures on biodiversity will continue to increase at least until 2020, and that the status of biodiversity will continue to decline. This is despite the fact that society's responses to the loss of biodiversity are increasing dramatically, and based on national plans and commitments are expected to continue to increase for the remainder of this decade. The current situation may be partly due to time lags between taking positive actions and discernible positive outcomes. But it could also be because responses have been insufficient relative to the growing pressures and impacts caused by the drivers of biodiversity loss.

The overall conclusion from GBO-4 was that while there has been significant progress towards meeting some components of the majority of the Aichi Biodiversity Targets, for example conserving at least seventeen per cent of terrestrial and inland water

areas, in most cases this progress was not sufficient to achieve the targets set for 2020. Additional action by governments and others is required to keep the *Strategic Plan for Biodiversity 2011–2020* on course and deliver the Aichi Biodiversity Targets.

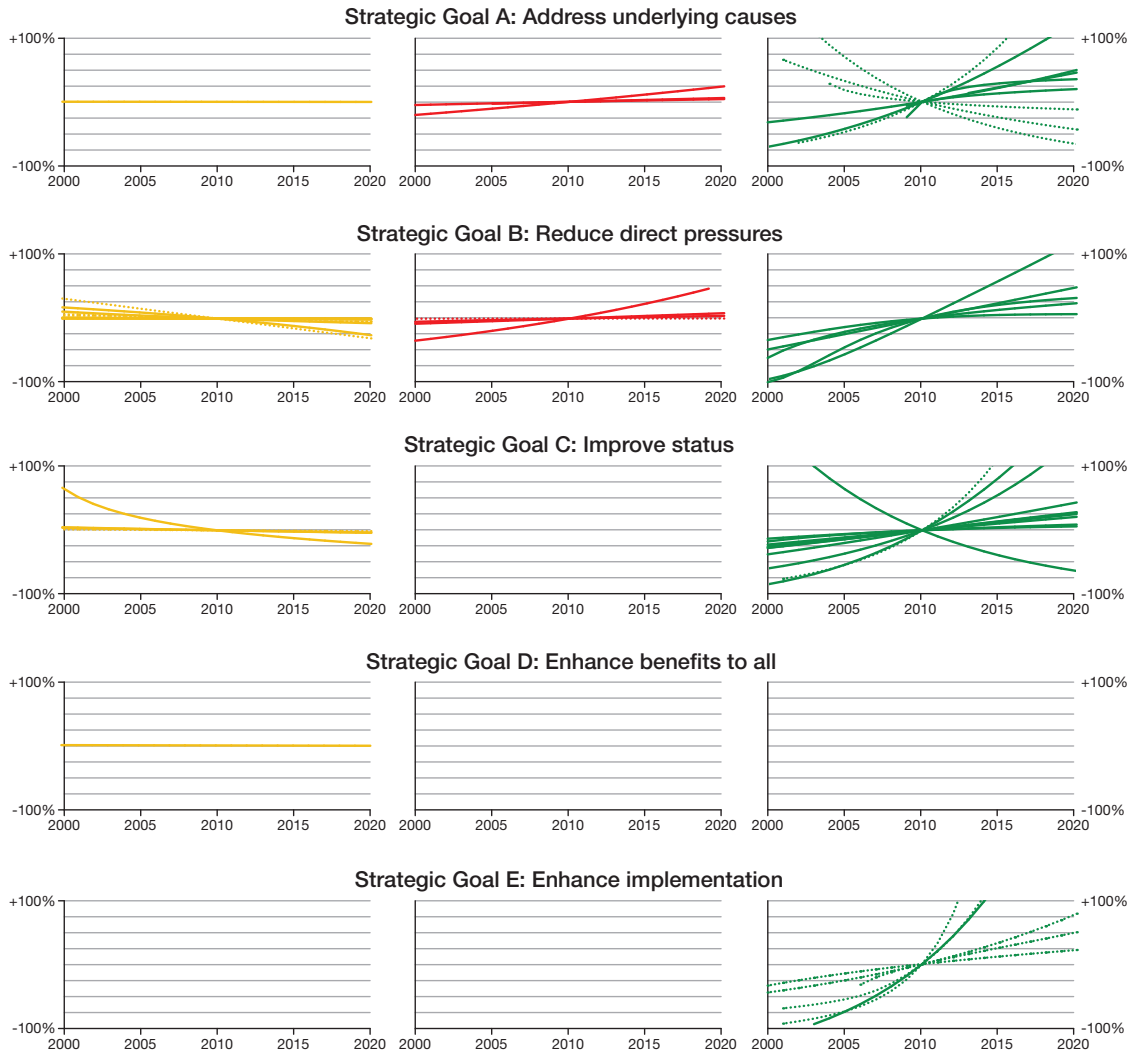


Figure 2: Trends in normalized indicators from 2000 and projected to 2020 for the five different Strategic Plan for Biodiversity 2011-2020 goals; State measures are coloured orange, Pressure measures are coloured red, and Response measures are coloured green. The horizontal dotted line represents the modelled indicator value in 2010. For state and response indicators, a decline over time represents an unfavourable trend (falling biodiversity, declining response) whereas for the pressure indicators a decrease over time represents a favourable trend (reducing pressure). A dashed coloured line represents no significant trend, whereas a solid coloured line represents a significant projected change between 2010 and 2020. Values are normalized by subtracting the modelled mean then dividing by the modelled standard deviation. For individual extrapolations on their original scale see target by target chapter in GBO-4 (SCBD 2014). Note that many time series continue prior to the year 2000; the x-axis has been limited to this date.

4. SUMMARY OF PROGRESS TOWARDS AICHI BIODIVERSITY TARGETS IN WEST ASIA

The global assessment and data provided by GBO-4 gives an overall picture of the world's progress towards the implementation of the *Strategic Plan for Biodiversity 2011-2020*, however, it contains limited regional information.

We have used the fifth national reports to the CBD to assess progress towards the achievement of the twenty Aichi Biodiversity Targets, both globally and for the West Asia region. This shows that progress in West Asia generally matches global trends (Figures 3a and 3b). Of the twelve countries considered to be part of the West Asia region (UNEP 2016), the fifth national reports for seven countries (Iraq, Jordan, Lebanon, Oman, Saudi Arabia, UAE and Yemen) had been assessed by January 2016 and are included in our analysis.

Since 2010, countries in the West Asia Region have made considerable efforts to deliver the *Strategic Plan for Biodiversity 2011-2020*, both at national and regional levels and there are many individual examples of success highlighted in this report. Much effort has been invested in strengthening country capacity and their policy and institutional frameworks.

Nonetheless, West Asia as a whole is already exceeding its bio-capacity, which means that national consumption footprints exceed the capacity of ecosystems to replace the resources consumed, and to absorb carbon dioxide emissions generated. Greater efforts are therefore needed in order to achieve the full and effective implementation of the *Strategic Plan for Biodiversity 2011-2020* and its targets by 2020.

Attaining most of the Aichi Biodiversity Targets in the West Asia region will require implementation of a package of actions typically including legal or policy frameworks which are coherent across government ministries and across sectors, socio-economic incentives, monitoring, enforcement, as well as public and stakeholder engagement.



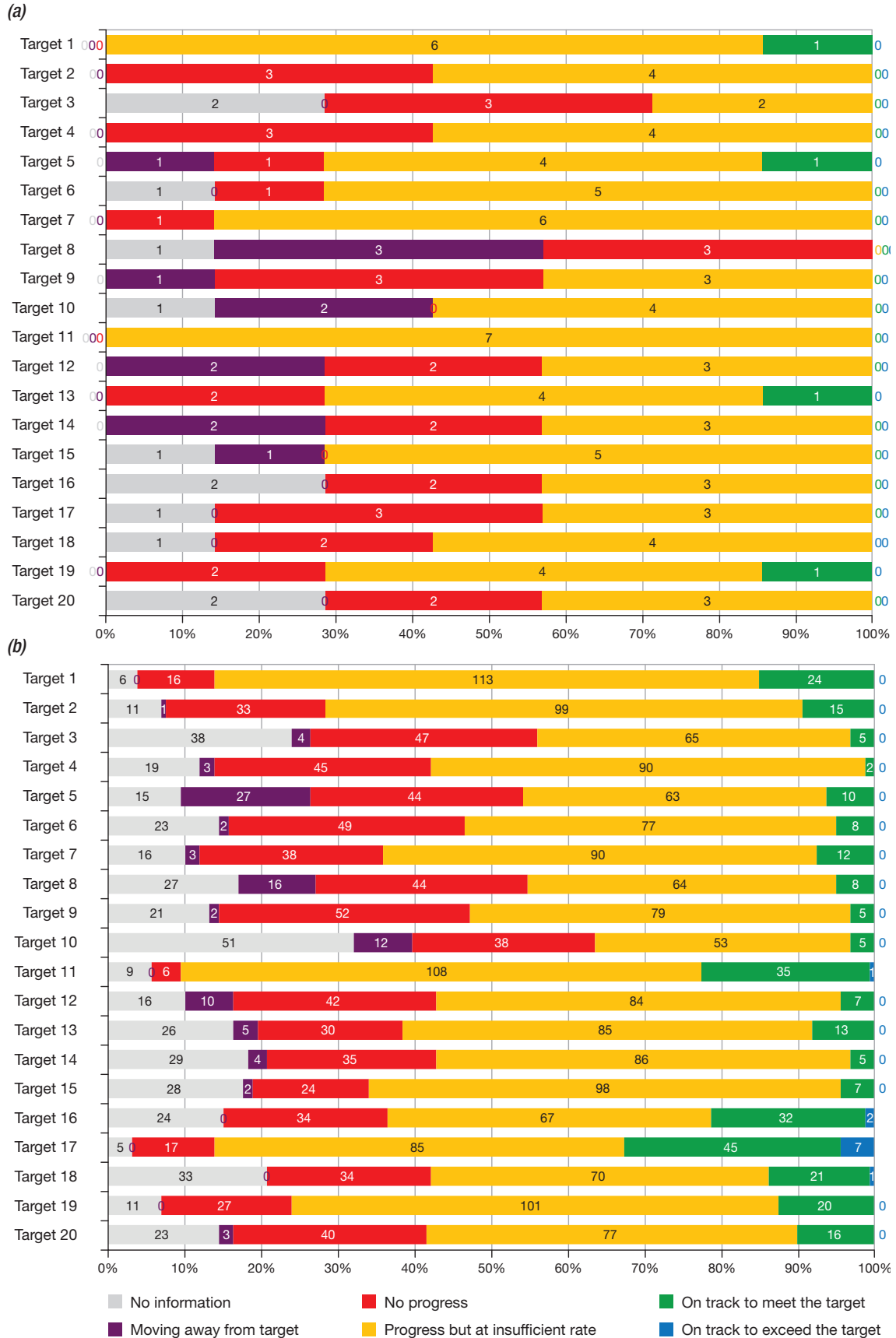


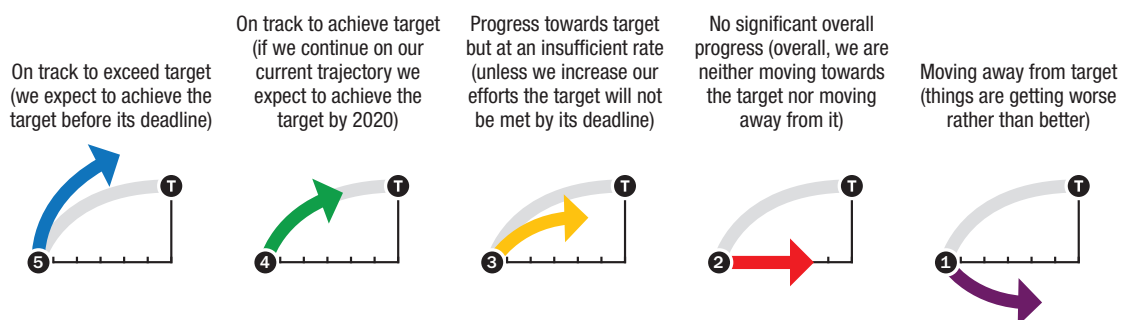
Figure 3: Synthesis of progress towards the achievement of the twenty Aichi Biodiversity Targets, (a) in the West Asia region (n=7) and (b) globally (n=159) (CBD 2015a).

AICHI BIODIVERSITY TARGET DASHBOARD

A dashboard of progress towards each of the targets has been developed, based on a consideration of the analysis of progress outlined below and the fifth national reports to the CBD. The same icons of progress developed for the GBO-4 report have been used.

Table 2: A dashboard of progress towards the CBD Aichi Biodiversity Targets in West Asia.

The table below provides an assessment of progress made towards each of the Aichi Biodiversity Targets as well as the level of confidence (***) based on the available evidence. It aims to provide summary information on whether or not the region is on track to achieve the targets. The assessment uses a five-point scale.



Target	Notes	Progress
Target 1 - Awareness increased	Data is limited to measure progress towards this target. There is some evidence of progress, but there is much to do, and many countries have other immediate challenges to resolve.	
Target 2 - Biodiversity values integrated	Countries in the West Asia region have started to engage in natural resource accounting systems and there is some progress. But it is hard to measure the speed of progress as data are lacking.	
Target 3 - Incentives reformed	There is very limited data available to measure progress on this target, and there are few examples of progress.	Insufficient data to assess progress
Target 4 - Sustainable production and consumption	Oil rich countries in the region have been moving further away from sustainable production and consumption in recent years. Other countries have more sustainable production and consumption systems in place.	
Target 5 - Habitat loss halved or reduced	The data to measure this target is not readily available in the region. For forests and wetlands there is a decline. For other habitats the status and trends are not known.	
Target 6 - Sustainable management of marine living resources	There is almost no information available to measure progress towards this Target in the region.	Insufficient data to assess progress
Target 7 - Sustainable agriculture, aquaculture and forestry	National reports suggest that countries are making progress but at a rate that will not achieve the target. Independent data are lacking to measure progress.	

Target	Notes	Progress
Target 8 - Pollution reduced	Much of the region is not suitable for agriculture and hence there is no application of fertilizer over extensive areas. In the fertile crescent area of the region fertilizer use is quite heavy. It seems unlikely that the region is progressing significantly towards the Target although attempts are being made.	
Target 9 - Invasive alien species prevented and controlled	Some countries are making progress towards this target, but there is not enough information to assess the rate of progress more generally across the region.	
Target 10 - Pressures on vulnerable ecosystems reduced	There is little data available to assess trends in climate change impacts on coral reefs and other vulnerable habitats in the region.	
Target 11 - Protected areas increased and improved	Progress towards the terrestrial and marine protected area coverage targets is encouraging in this region, which started from a lower based than many other regions. Ensuring effective and equitable management may need further attention in the lead up to 2020.	
Target 12 - Extinction prevented	Some countries in the region are making considerable efforts to reverse the decline in iconic and endemic species. In other countries the efforts are more modest, but there is progress in all countries.	
Target 13 - Genetic diversity maintained	There is no strong evidence of loss of genetic diversity in domestic animals in this region. However, data are not readily available and hence we cannot be sure that this target is on track.	Insufficient data to assess progress
Target 14 - Ecosystems and essential services safeguarded	There is little evidence of progress on this target from the region. There is also very little data available to measure progress.	
Target 15 - Ecosystems restored and resilience enhanced	Some countries are taking actions to try and achieve this Target, and the restoration of some habitats has received a lot of attention in the region in recent years. However, reliable data are hard to locate at the regional scale.	
Target 16 - Nagoya Protocol in force and operational	Half of the countries in the region have either signed or ratified the Nagoya protocol. Others are still working on this task.	
Target 17 - NBSAPs adopted as policy instrument	A number of countries in the region have completed their NBSAP revision. However, almost half the countries still need to do this. It is expected that all will be completed by 2020.	
Target 18 - Traditional knowledge respected	Traditional knowledge remains important in this region and is being regularly used by many people. Whether this will achieve the full meaning of the Target is harder to determine.	
Target 19 - Knowledge improved, shared and applied	Although progress has been made to make biodiversity data from the region available, there is still much to do to gather and make available historical data and to put in place systems to generate and make available contemporary information for a number of countries.	
Target 20 - Financial resources from all sources increased	There is very little information on progress towards this target and trends are largely unknown.	Insufficient data to assess progress

5. TARGET BY TARGET ANALYSIS OF PROGRESS TOWARDS AICHI BIODIVERSITY TARGETS IN WEST ASIA

While the global assessment and data provided by GBO-4 gives an overall picture of the world's biodiversity status, it does not contain regional breakdowns of these trends, which hinders decision making.

This second edition of the *State of Biodiversity in West Asia* gives a more focused assessment of the changes in biodiversity state, pressures and human responses within the West Asia region. The assessment is structured around efforts and progress towards the achievement of the global Aichi Biodiversity Targets by West Asian countries, using regional case studies to illustrate progress. The NBSAP process has been used to gather these stories from countries in the region and link the actions to Aichi Biodiversity Targets. This method displays how the *Strategic Plan for Biodiversity 2011-2020* framework has been an effective guide to inclusive and integrated country-driven processes; that in turn appreciated impacts on climate change mitigation, poverty reduction, the green economy and sustainable development. A mapping exercise has

shown which Aichi Biodiversity Targets are supported by each case study to highlight their synergistic impact on biodiversity conservation and governance. The efforts show encouraging advancements in the field of biodiversity conservation, awareness and mainstreaming into decision making processes within West Asia.

A mixture of data collected from international organizations, which illustrate major gaps between the current status and the achievement of the targets, has also been used. Although the datasets used are not all consistent, and in some cases do not extend past the start of the period of implementation of the Strategic Plan, they are included to illustrate that there are relevant datasets to measure progress towards conservation targets in West Asia, but that further effort needs to be made to update and bring together the relevant data before 2020.

Material and information taken from the fifth national reports received from the region and analysed by the CBD have also been used.





TARGET 1: AWARENESS OF BIODIVERSITY INCREASED

By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.

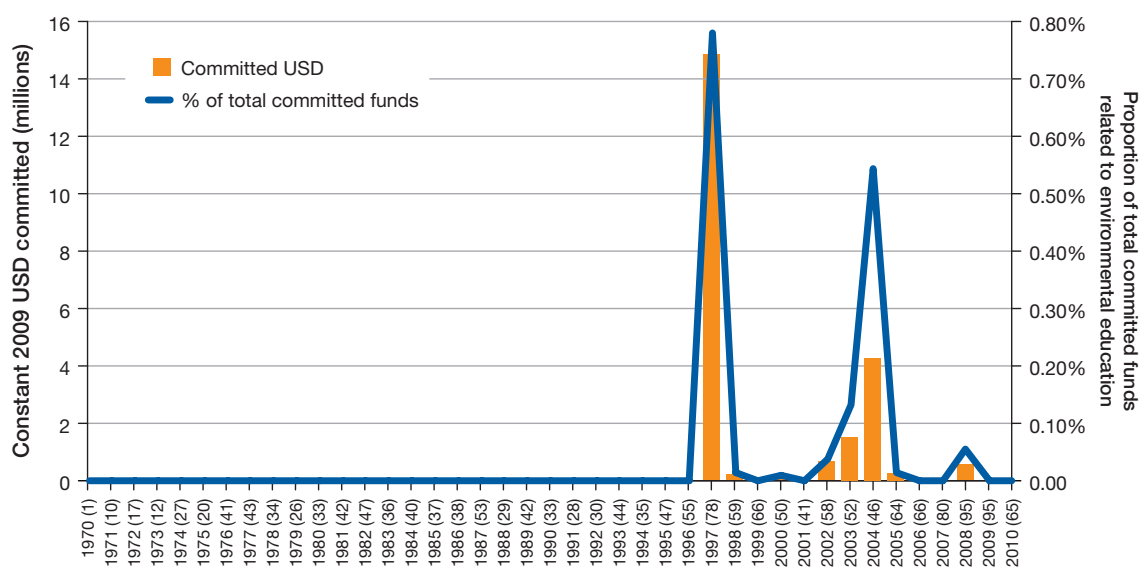
“Addressing the direct and underlying drivers of biodiversity loss will ultimately require behavioural change by individuals, organizations and governments. Understanding, awareness and appreciation of the diverse values of biodiversity underpin the willingness of individuals to make the necessary changes and actions and to create the “political will” for governments to act. Actions taken towards Target 1 will greatly facilitate the implementation of the *Strategic Plan for Biodiversity 2011-2020* and the fulfilment of the other nineteen Aichi Biodiversity Targets, particularly Target 2.” (CBD 2016e)

Enhancing the awareness and information on the values of biodiversity and the steps that people can take to conserve and use it sustainably is a basic requirement for taking action to reverse biodiversity loss. Global information in the fifth national reports to the CBD suggests that about 75 per cent of reporting parties are making some progress towards this target, but in most cases this will not be enough to reach the target by 2020 and additional actions will be needed, especially buy-in by the governments. For the West Asia region, the seven analysed CBD fifth national reports indicate that progress is insufficient to meet Target 1 by 2020 (CBD 2015a).

However, there are positive actions in the region. Countries such as Jordan, Lebanon, UAE and Yemen have initiated school campaigns and public awareness activities (Box 1.1 and Box 1.2). For example, the Environment Protection Agency in Yemen organizes and actively participates in events including “World International Environment Day,” “Water Environmental Day,” “Desertification Day” and “Arabs Environmental Day,” which promote biodiversity awareness and the importance of its sustainable use. Biodiversity knowledge is disseminated via brochures, books and the local media. No information is available on whether such initiatives have contributed to better awareness of steps which people can take to conserve and sustainably use biodiversity.

Information from AidData, a global database on investments in environmental education, can provide an indication of the commitment to increase the awareness of environmental issues. No projects from West Asia on AidData referenced environmental education prior to 1996 and since then, donor investment has varied (Figure 1.1). With the exception of peaks in 1996 and 2004, the proportion of the total funds committed by donors on AidData to environmental education was less than half of one per cent of total development aid. Moreover, as the projects may also target other activities, the data may be an over-estimation of the funds specifically directed to environmental education.





Year and total number of AidData projects in the region in brackets

Figure 1.1: Absolute and proportional investment in environmental education by donors on AidData between 1970 and 2010, in constant 2009 United States Dollars (USD) (source: Tierney et al. 2011). Data are from the AidData 2.1 Research Release, which includes a subset of donors available through AidData that had complete activity coding (at the 95 per cent level). This subset is a total of 47 donors, consisting of multilateral development organizations (such as the World Bank, the African Development Bank (AfDB) Group, Asian Development Bank (AsDB), etc.) as well as donors outside the Development Assistance Committee (DAC) (Brazil, India, UAE, etc.). Using the AidData Activity Codes, each project can receive multiple activity codes (so as to better capture the entire scope of each activity), but there is usually not enough information on the project to assign specific project amounts to each activity. As such, the analysis reflects the full commitment amount for each project with one of the specified activity codes of interest, even though other activities were likely included in each project.

Box 1.1: Assessment of Marine Ecosystem Diversity in the Arabian Gulf: Threats and Conservation.

(source: Naser 2014b)

Assessment of Marine Ecosystem Diversity in the Arabian Gulf		
Action	Output	Relevant Aichi Biodiversity Target
Production of knowledge	Awareness of biodiversity values	1
Biodiversity assessment	Knowledge sharing	19

A recent biodiversity assessment was undertaken by the University of Bahrain, published in an open access book titled *Marine Ecosystem Diversity in the Arabian Gulf: Threats and Conservation* (Naser 2014a). The study analysed the valued ecosystem components in the Arabian Gulf, which hosts some of the world's most critically endangered species, such as dugongs, green and hawksbill turtles, and supports a variety of marine ecosystems, including seagrass beds, mangroves, coral reefs and mudflats that are uniquely adapted to the environmental extremes of the region (Naser 2014a, p. 317). These unique biological features in the Gulf region call for concerted action to mobilize regional support at the highest levels to safeguard these vulnerable ecosystems. The study identified the main environmental stressors, whether natural or anthropogenic, and recommended the adoption of the Strategic Environmental Assessment (SEA) tool, which integrates environmental considerations in the policy decision-making process. The study also identified the need for a holistic approach in environmental monitoring and conservation efforts, especially since marine ecosystems in the Gulf are integral to the economic and social activities of local communities, such as the historic pearling industry, or fisheries that are vital to maintaining food security.

Reclamation and dredging are some of the main anthropogenic impacts which threaten the integrity of marine ecosystems in the Arabian Gulf. Countries continue to use coastal areas to respond to population growth needs, economic and recreational development. Industrial effluents such as waste water are also disposed of in the Gulf in addition to desalination effluents. Since the six Gulf countries (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and UAE) have scarce fresh water resources, they rely on desalinated water and produce 60 per cent of the world's total desalinated water. Sewage discharges are another threat, and even though secondary and tertiary treatment is applied, heavy chemicals and metals pollute marine ecosystems.



*Reclamation site in Bahrain.
(Photo credit: Intechopen)*

In conclusion, while anecdotal evidence suggests that awareness of biodiversity is low within the region, efforts are underway to increase biodiversity awareness. However, it seems

unlikely that the target will be achieved on time. Furthermore, data to measure progress are highly limited in most of the region.

Box 1.2: UAE Adopts its National Environmental Awareness Strategy.

(source: Ministry of Environment and Water, UAE 2014)

Survey to measure the environmental awareness at the national level		
Action	Output	Relevant Aichi Biodiversity Target
Survey of general public	Awareness level on the national level	1
Integrating biodiversity values in the National Strategy for Environmental Education and Awareness	embedding biodiversity values in decision making	2

Under the National Environment Day celebrations (February 2015) the Ministry of Environment and Water launched the national strategy for environmental education and awareness, prepared in cooperation and coordination with the competent authorities in UAE and the environmental authorities concerned.

The strategy aims to: educate young people to lead the sustainability efforts of UAE; strengthen the community’s commitment to the environment and sustainable development; encourage the active participation of enterprises and economic sectors in the trend towards environmental sustainability; and ensure harmonization and effectiveness of awareness and environmental education in the state's efforts, as well as capacity building to enhance the implementation of the strategy and programmes.

The Ministry of Environment and Water also conducted a survey aiming to measure changes in the level of awareness and the level of positive behaviour towards the environment in the coming years (2015-2021). The survey used the priority issues in the state as the basis for measuring the level of awareness (water, groundwater, biodiversity, climate change, air quality, and waste). Transport, energy, waste, and water issues were also used to measure behavioral changes.



TARGET 2: BIODIVERSITY VALUES INTEGRATED

By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.

“The values of biodiversity are not widely reflected in decision making. This is true in the context of development and poverty reduction strategies. Integrating and reflecting the contribution of biodiversity, and the ecosystem services it provides, in relevant strategies, policies, programmes, and reporting systems is an important element in ensuring that the diverse values of biodiversity and the opportunities derived from its conservation and sustainable use are recognized and reflected in decision making. Similarly, accounting for biodiversity in decision-making is necessary to limit unintended negative consequences.” (CBD 2016e)

The integration of biodiversity into development and poverty alleviation strategies requires an understanding of how aspects of biodiversity support poverty alleviation. This in turn can lead to the mainstreaming of biodiversity goals into sectoral decision making across different government agencies other than those directly related to biodiversity issues; for example ministries of finance, health and development, tourism and education.

Analysed CBD fifth national reports indicate that little to no progress has been made toward implementing all sub elements of Target 2 in West Asia. However, some countries are clearly moving biodiversity toward the centre of decision making, particularly in those sectors and agencies that directly relate to biodiversity.

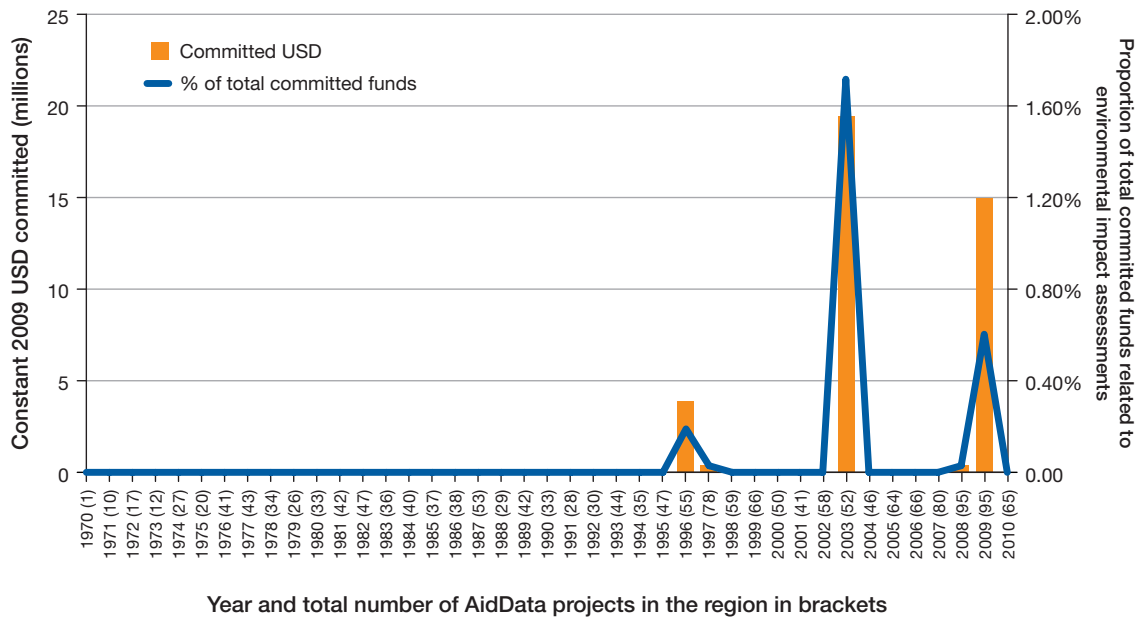
For Iraq, the fifth national report to the CBD presents examples of considerable progress in recent years (Ministry of Environment, Republic of Iraq 2014). This includes the integration of biodiversity considerations into the NBSAP for Iraq (2013-2017), the National development plan (2010-2014), the Higher Education Strategy, the Poverty Reduction Strategy, the Health Strategy, the Energy Strategy (INES) and the Water and Land Resources Strategy (SWRLI). UAE has also succeeded in integrating the biodiversity initiatives into the country's green economy initiatives (CBD 2015a).

One of the biggest implementation barriers for West Asia countries is that they often lack suitable information systems, as well as technologies, to track and assess the state of natural ecosystems and their economic contributions to national economies. Indeed, most countries in West Asia have not yet engaged formally with natural capital accounting

processes, for example through The Economics of Ecosystems and Biodiversity) TEEB or the Wealth Accounting and the Valuation of Ecosystem Services (WAVES) partnership. At the regional level, UNEP-ROWA has commissioned a significant report on the economic value of the region's wetlands (box 2.1), and Lebanon has signed the WAVES *Communiqué on Natural Capital Accounting* and has undertaken an economic valuation of its natural forests (Box 2.2.) UAE's Ministry of Environment and Water is currently undertaking an initiative on natural capital assessment as part of its efforts to value ecosystem services at the national level and within the NBSAP framework of national targets aligned with the Aichi Biodiversity Targets (Ministry of Environment and Water, UEA 2014).

Investment in environmental impact assessments can provide an indication of the integration of biodiversity values into development. AidData shows that investment in environmental impact assessments was not part of development finance project descriptions until 1995 (Figure 2.1). Since then, investment by donors has been highly varied with a peak in 2003. The low levels of investment raises concerns that donors do not see the importance of environmental impact assessments.

In conclusion, while data are limited there is evidence of some progress toward the achievement of this target. However, much more would need to be done to fully achieve the target within this region and this may be very difficult given the political instability that is prevalent in a number of the countries.



Year and total number of AidData projects in the region in brackets
 Figure 2.1: Absolute and proportional investment in environmental impact assessments by donors on AidData between 1970 and 2010 (Tierney et al. 2011).

Box 2.1: The Economic Value of Coastal and Freshwater Wetlands in West Asia.

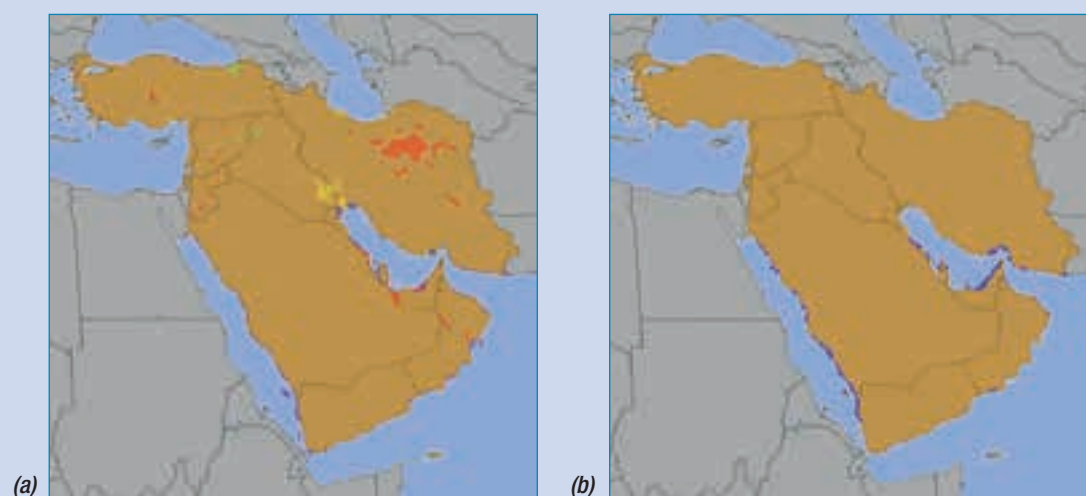
(source: Florian Eppink and Luke Brander 2014)

The Economic Value of Coastal and Freshwater Wetlands in West Asia		
Action	Output	Relevant Aichi Biodiversity Target
Production of knowledge	Awareness of biodiversity values	1
Sharing knowledge through the open access study	Knowledge sharing	19

UNEP-ROWA supported the preparation of a preliminary assessment of the economic value of coastal and freshwater wetlands in West Asia (Eppink et al. 2014). Wetlands can be defined as “areas where the soil is periodically or permanently saturated with or covered by water”, and West Asia has one per cent of the world’s wetlands.

The valuation study employs value transfer techniques and compared wetland values under two scenarios. One is a business-as-usual scenario of wetland loss in which, for the period of 2000 to 2050, no new efforts are made to protect wetlands. The other is a scenario that prioritizes conservation. The study found that the foregone value of lost mangroves in 2050 for West Asia would be USD 34.8 million annually, with a present value in 2010 of between USD 267 million and USD 538 million. The foregone annual value of lost freshwater and coastal wetlands in 2050 for the region would be USD 262 million, with a present value in 2000 of between USD 2 billion and USD 6.8 billion (Eppink et al. 2014).

The study also provides recommendations for policy options in line with the approach advocated by TEEB. The study arose from a decision passed by the LAS to determine the economic value of the region’s wetlands. This valuation aims to influence decision makers to make science-based policies, and it aims to strengthen the economic imperative to invest in policies that would conserve and sustain the region’s wetlands.



Maps of wetland distribution in West Asia. Study nations are coloured brown, non-study nations are grey and water bodies are light blue. (a) Wetland distribution in 2000. Different wetland classes are indicated by colour: Yellow for freshwater marsh and floodplain; dark blue for coastal wetland including estuary, delta, and lagoon but excluding mangrove; red for pan, brackish/saline wetland; and green (visually exaggerated for illustration purposes) for bog, fen, and mire. (b) Mangrove distribution in 2010, indicated by dark blue. Mangroves have been visually exaggerated for illustration purposes. (Photo credit: Florian Eppink)

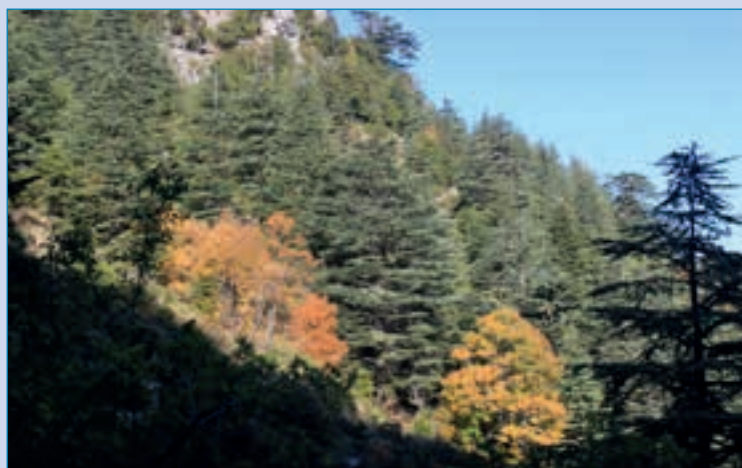
Box 2.2: Lebanon Determines the Economic Value of its Forests.

(source: Elsa Sattout 2014a)

The Economic Value of Coastal and Freshwater Wetlands in West Asia		
Action	Output	Relevant Aichi Biodiversity Target
Production of knowledge	Awareness of biodiversity values	1
Economic valuation of Lebanon's forests	Biodiversity values integrated into national development	2
Economic valuation of Lebanon's forests	Improved knowledge	19

Ecosystems are vital for the well-being of humans, and assigning an economic value to these services can help the acknowledgement and understanding of their benefit. The objective of the *German Development Cooperation (Deutsche Gesellschaft für Internationale Zusammenarbeit, (GIZ)) Regional Project on Collaborative Partnership on Mediterranean Forest* was to calculate the total economic value of Lebanon's forests, finding that this equates to 0.5 per cent of the national Gross Domestic Product (GDP). The Lebanese Ministry of Agriculture collaborated with GIZ to conduct this two year study (2012-2014) (Sattout 2014b). The classification of the ecosystem services for the calculation of the total economic value was determined based on the conceptual framework of the Millennium Ecosystem Assessment (MEA 2005), which determined four types of forest ecosystem services that forests provide: provisioning, cultural, regulating and supporting services. The calculated values revealed that the highest benefits correspond to Non-Wood Forest Products (NWFP) (39 per cent), water catchment (28 per cent) and socio-cultural values (17.7 per cent) (Sattout 2014b).

The study was conducted to help in designing national forest policies based on the value of Lebanon's forests, as the Lebanese Ministry of Agriculture is in the process of developing a National Forest Policy (NFP) integrating best management practices of forest ecosystems for 2014-2015 and developing the instruments for the NFP implementation through the update of the existing forestry laws. This study also aimed to mainstream forest conservation and sustainable management in agriculture, water and energy, tourism and land use. The study could also pave the way in developing innovative approaches to forest management while taking into account the specificity of Lebanon's forests. Finally, this project is instrumental in bringing in new opportunities such as a new Cedar Forest Trust fund to conserve, expand, and restore Cedar forests, promote forest enterprise and green economy, and empower women in rural areas (Sattout 2014b).



Lebanon's diverse forests.
(Photo credit: Elsa Sattout)



TARGET 3: INCENTIVES REFORMED

By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio-economic conditions.

“Substantial and widespread changes to subsidies and other incentives that are harmful to biodiversity are required to ensure sustainability. Ending or reforming harmful incentives is a critical and necessary step that would also generate net socio-economic benefits. The creation or further development of positive incentives for the conservation and sustainable use of biodiversity, provided that such incentives are in harmony with the Convention and other relevant international obligations, could also help in the implementation of the *Strategic Plan for Biodiversity 2011-2020* by providing financial resources or other motives to encourage actors to undertake actions which would benefit biodiversity.” (CBD, 2016e)

Globally, there is mixed progress toward Target 3 (SCBD 2014). Very little information is available on non-financial incentives and the focus is on positive financial incentives for conservation and the sustainable use of biodiversity. Generally, no progress is being made toward eliminating, phasing out or reforming harmful incentives, although the need to remove them is recognized globally.

The fifth national reports analysed by the CBD from West Asia show evidence of modest reforms of harmful incentives. In Jordan, for example, the adoption of a bylaw (G9/2008) under the agricultural law No. 44 of 2002, allows local communities to collect fruit and wood and to cultivate mushrooms in caves on public land near their homes under special regulations (Ministry of Environment, Jordan 2014). Additionally, in return for efforts toward protecting forest resources, families are allowed to cultivate medicinal and ornamental plants for income on 1,000 m² bare forest areas. This promotes the sustainable consumption of natural resources and contributes to poverty alleviation.

At the regional level CITES and the CMS Secretariats and the Food and Agriculture Organization of the United Nations (FAO) facilitated capacity building workshops in Dubai and Kuwait to raise awareness about the new listings of five sharks and ray species under CITES Appendix II. This aimed to enhance the sustainable conservation and management of fishing practices to protect sharks and by-catch fisheries, and align national and regional regulatory frameworks to accommodate new CITES measures for sharks starting in September 2014.

Information from the AidData database shows that investment in the fisheries sector of the region is increasing (Figure 3.1). This may be suggesting that more attention is being placed on sustainable management and the removal of any harmful incentives in the region.

In conclusion, there is limited evidence of progress towards the achievement of this target in the West Asia region. There are also limited data available to measure any progress.

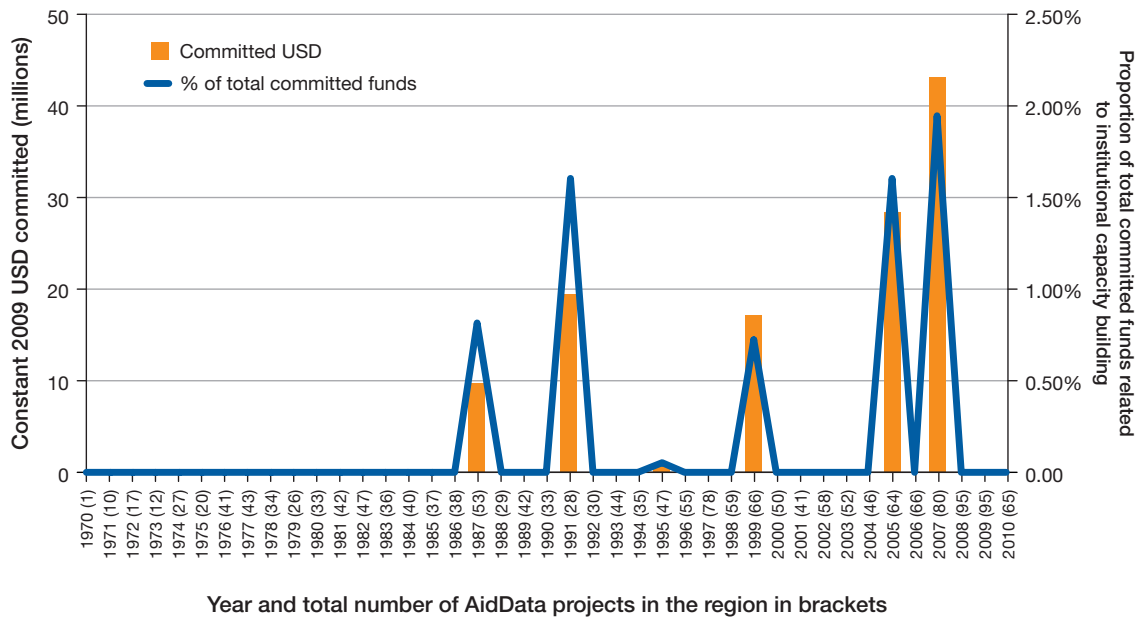


Figure 3.1: Absolute and proportional investment in institutional capacity-building in the fishing sector by donors on AidData between 1970 and 2010 (source: Tierney et al. 2011).





TARGET 4: SUSTAINABLE CONSUMPTION AND PRODUCTION

By 2020, at the latest, Governments, businesses and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.

“The unsustainable use or overexploitation of resources is one of the main threats to biodiversity. Currently, many individuals, businesses and countries are making efforts to substantially reduce their use of fossil fuels, with a view to mitigating climate change. Similar efforts are needed to ensure that the use of other natural resources is within sustainable limits. This is an integral part of the Vision of the *Strategic Plan for Biodiversity 2011-2020*.” (CBD 2016e)

Globally, GBO-4 reports that steps have been taken towards sustainable production and consumption, but not on a sufficient scale to meet Target 4. Additionally, use of natural resources is generally moving away from being within safe ecological limits (SCBD 2014). This conclusion also emerges from analysis of the fifth national reports from West Asia. However, in Yemen, for example, the promotion of sustainable agriculture through enhancing the efficiency of rainwater use and reducing reliance on chemical pesticides shows promise (Ministry of Water and Environment, Republic of Yemen 2014).

The Ecological Footprint of Consumption (EF) is an indicator of biocapacity and assesses the total domestic demand for resources and ecological services of a population. It accounts for the export of resources and ecological services to other countries, as well as the import for domestic consumption

(Global Footprint Network 2012). If the entire global population used the same volume of ecological goods and services each year as an average person from West Asia used in 2010, the regenerative capacity of almost three Earths would be required to sustain the resulting level of consumption (WWF 2014). This result is heavily influenced by the oil rich nations in West Asia, with some other countries in the region having much lower ecological footprints.

The total EF in West Asia grew by 92 per cent between 2000 and 2011, and the per capita EF for the West Asia region also shows strong increase since 2000. Since 2006 the per capita EF in West Asia has exceeded the global average (Figure 4.1). This is particularly due to countries like Kuwait, Qatar and UAE, which have some of the largest total and per capita ecological footprints in the world (World Mapper 2006; Figure 4.2).

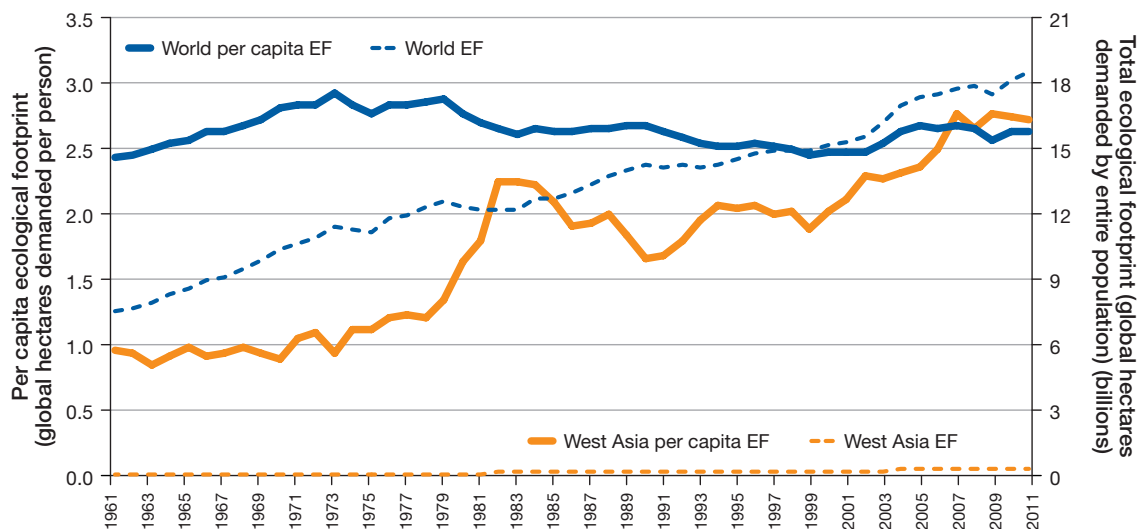


Figure 4.1: Combined graph showing total Ecological Footprint (1961-2011) globally and in West Asia, and Ecological Footprint per capita for West Asia and the world (1961-2011); measured in global hectares demanded per person (which reflects the goods and services used by an average person in each country, and the efficiency of the resources used to provide those goods and services) (source: Global Footprint Network 2015).

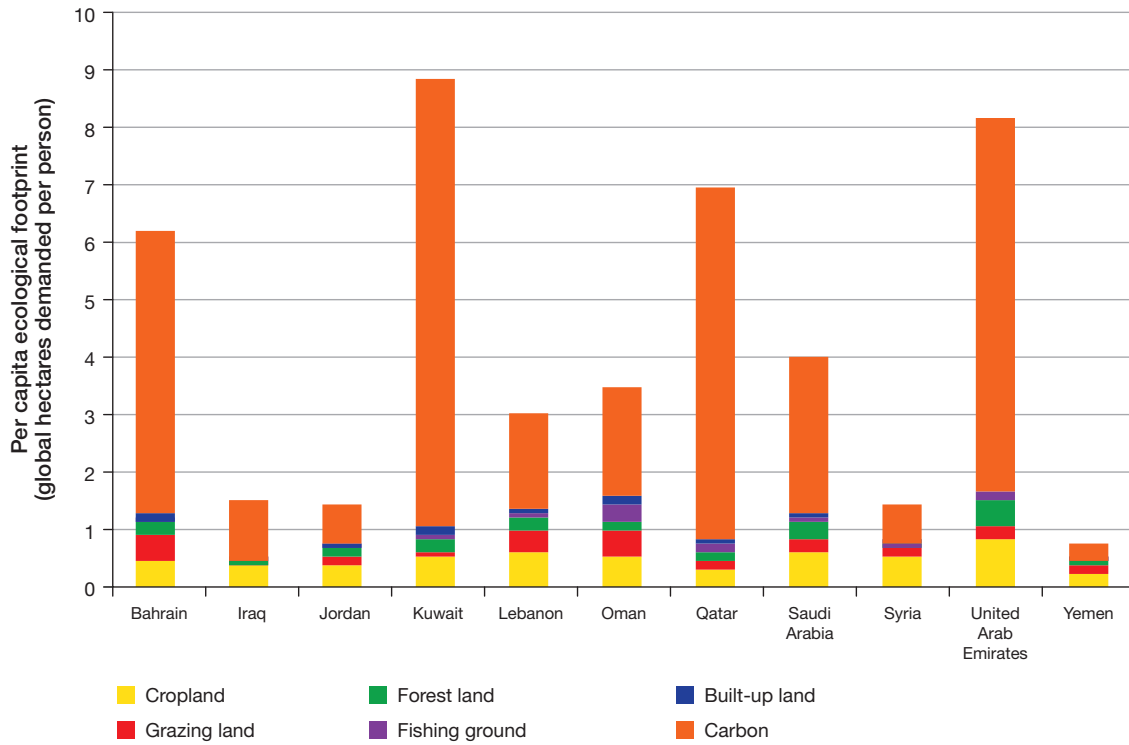


Figure 4.2: Per capita Ecological Footprint by component for each country in 2011 (source: Global Footprint Network 2015).

For this region, carbon is by far the largest component of the EF. Whereas carbon accounted for 55 per cent of the global EF in 2011, in West Asia it accounted for 68 per cent (Figure 4.3; Global Footprint Network 2015). Qatar has the largest carbon footprint in the

world, relative to population; if the global population used the same natural resources as an average resident of Qatar, 4.8 planets would be needed to fulfill the demands sustainably (WWF 2014).



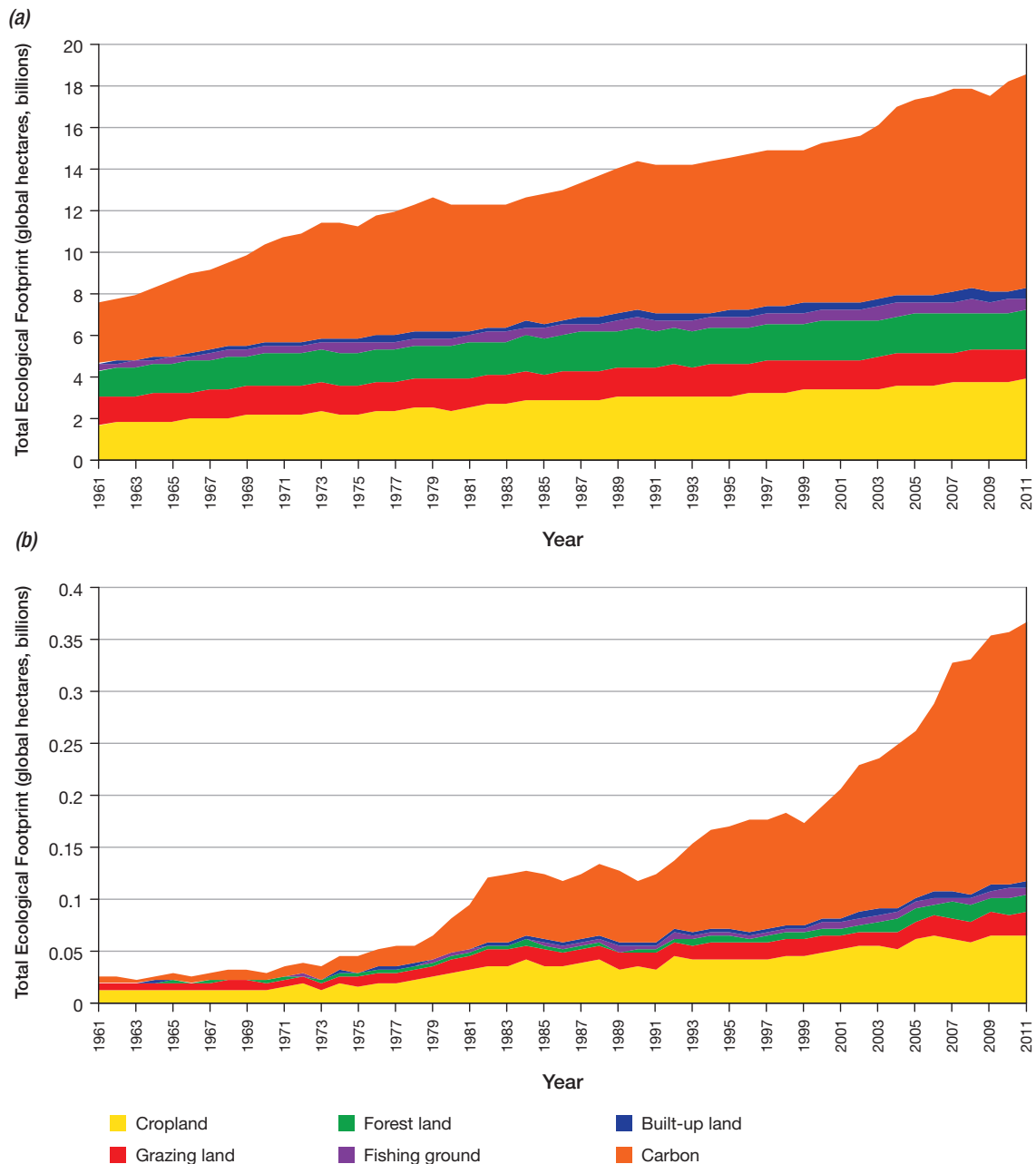


Figure 4.3: Area chart showing the Ecological Footprint by component for (a) Global, and (b) West Asia (1961-2011) (source: Global Footprint Network 2015).

Inconsistencies in the data should be kept in mind when interpreting the above graphs, as the list of countries considered as part of West Asia by the Global Footprint Network to calculate EF do not exactly match those considered by UNEP Live (UNEP 2016). In addition, the number of countries included in the analysis varies by year as well as by variable, with very few countries reporting at the beginning of the time series.

In conclusion, the ecological footprint of the West Asia region has been rapidly increasing and now exceeds that of many other regions. This is primarily due to the wide availability and heavy use of fossil fuels in some countries in the region that are exceptionally rich in this resource. Actions have been taken across the West Asia region towards this target, but more needs to be done to keep the impacts of using natural resources well within safe ecological limits.



TARGET 5: HABITAT LOSS HALVED OR REDUCED

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.

“Habitat loss, including degradation and fragmentation, is the most important cause of biodiversity loss globally. Natural habitats in most parts of the world continue to decline in extent and integrity, although there has been significant progress to reduce this trend in some regions and habitats. Reducing the rate of habitat loss, and eventually halting it, is essential to protect biodiversity and to maintain the ecosystem services vital to human wellbeing.” (CBD 2016e)

Degradation of natural habitats continues to be a major driver of biodiversity loss globally. The GBO-4 indicated that most countries have targets relating to reducing the loss of natural habitats (SCBD 2014).

However, analyses of fifth national reports from West Asia indicate that little to no progress is being made toward reaching Target 5 by 2020 (CBD 2015a). Several countries, including Jordan and Yemen, report that funding and planning is in

place to reduce degradation, but little progress has been made in terms of putting plans in to practice. Oman has sought to create alternative systems for lost habitats, including the creation of 500 artificial coral reef moulds on Al Fahal Island and the Dimaniyat Islands (Ministry of Environment and Climate Affairs, Sultanate of Oman 2014). Although these initiatives show promise in terms of the region’s restoration abilities, natural habitats continue to be degraded and fragmented.

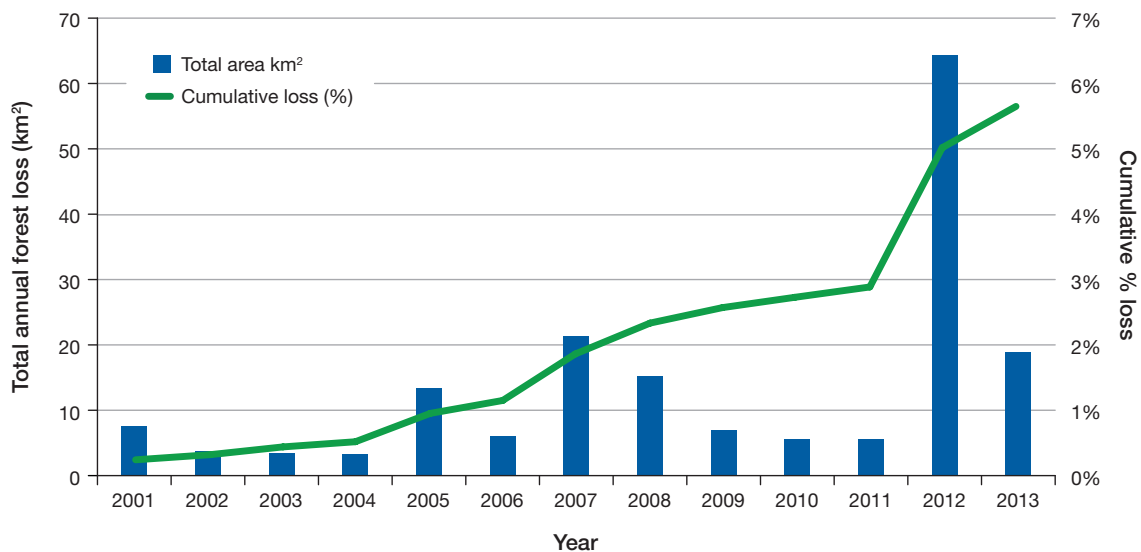


Figure 5.1: Trends in the loss of forest cover in the West Asia region (2001-2013) compared to 2000 forest cover (>10% tree cover); blue bars represents annual forest loss and the green line represents cumulative loss. Data are from global Landsat imagery at 30 m spatial resolution. Version 1.1 was used which includes a new 2013 loss layer and updated 2011 and 2012 layers. A threshold of greater than 10% tree cover was used to remove uncertainty in forest definition around areas with sparse tree cover. Trees are all vegetation taller than 5 m in height. Forest loss is a stand-replacement disturbance or a change from forest to non-forest state (source: Hansen et al. 2013).

Forest area in the West Asian region is less than one per cent of total land cover, the region being a largely arid area with sparse vegetation and large deserts. However, recent analysis based on remote sensed data (Hansen et al. 2013) shows that forest loss in West Asia has increased over the recent decade, with a jump in the deforestation rate from 2011 to 2012 (Figure 5.1). From 2001-2013, cumulative tree

cover loss increased from 0.44 per cent to 5.71 per cent compared to forest cover in 2000. High rates of forest loss were seen in 2012 (2.14 per cent) and 2007 (0.7 per cent), while 2003 and 2004 had the lowest proportion of deforestation (0.1 per cent each). As an attempt to address some of these losses, countries like Lebanon have embarked on tree planting programmes (Box 5.1).

Box 5.1: Lebanon Embarks on a Comprehensive Reforestation Project.

(source: United Nations Development Programme (UNDP) 2015)

Action	Output	Relevant Aichi Biodiversity Target
Production of knowledge	Awareness of biodiversity values	1
Biodiversity conservation assessment	Incorporated in National planning	2
Reforestation	Preventing loss of habitat	5
Ecosystems provide essential services	Ecosystem services such as water, health and livelihoods restored	14
Reforestation	Increase ecosystem resilience	15

Lebanon's fragmented forests and dispersed woodlands are degrading and this requires prompt responses and restoration efforts. The Safeguarding and Restoring Lebanon's Woodland Resources Project was launched in 2009 by the Lebanese Ministry of Environment in coordination with UNDP and GEF. With the assistance of the project, the Ministry of Environment has successfully launched the third phase of the National Reforestation Plan, by issuing direct contracts to 48 municipalities. Thus 191.45 hectares of land were restored with a total funding of around USD 1.33 million. The project also conducted experimental trials, which tested new low cost and no irrigation reforestation techniques. The reforestation project also focused on raising awareness on the necessity of woodland ecosystem conservation through organizing professional photo documentation of native trees of national importance, and publication and dissemination of a number of illustrated technical brochures in both Arabic and English on the ten most important native trees in Lebanon. This reforestation project helps to ensure the resilience and sustainability of forests, combats land degradation and reduces soil erosion. While the project aimed at increasing the areas to be restored, it also contributed to enhanced biodiversity conservation, as well as rehabilitation and restoration of damaged lands and forested areas in Lebanon.

Box 5.2: UAE's Habitat Mapping Key to Conservation and Sustainable Development in Abu Dhabi.

(source: Ministry of Environment and Water, UAE 2014)

Habitat Mapping Key to conservation and sustainable Development		
Action	Output	Relevant Aichi Biodiversity Target
Awareness	Reduce unsustainable consumption of natural resources	1
Biodiversity conservation	Awareness of ecosystems value	5

The Environment Agency-Abu Dhabi (EAD) has completed mapping of terrestrial and marine habitats, land use and land cover for the Emirate of Abu Dhabi. The project covered the entire Emirate – 59,640 square kilometres of terrestrial and 28,220 square kilometres of marine environments.

This is possibly the largest and most detailed delineation of habitats in the world. Advanced image-processing techniques together with validation through field surveys have resulted in data accuracy exceeding 90 per cent on the land and 75 per cent in marine areas. An innovative mapping approach combined several terrestrial and marine habitats into an integrated classification schema. This powerful data set will allow environmental decision-making to be much more objective and quantitative.

Protected area delineation, environmental permitting, land use and conservation planning, quantifying ecosystem services, estimating blue carbon, and detecting land degradation and habitat loss, are just some of the areas where the mapping is being utilized.

The main features of this project were highlighted in a high-level launch organized by EAD and attended by senior technical representatives from relevant government and non-government organizations and environmental consultants.



TARGET 6: SUSTAINABLE MANAGEMENT OF AQUATIC LIVING RESOURCES

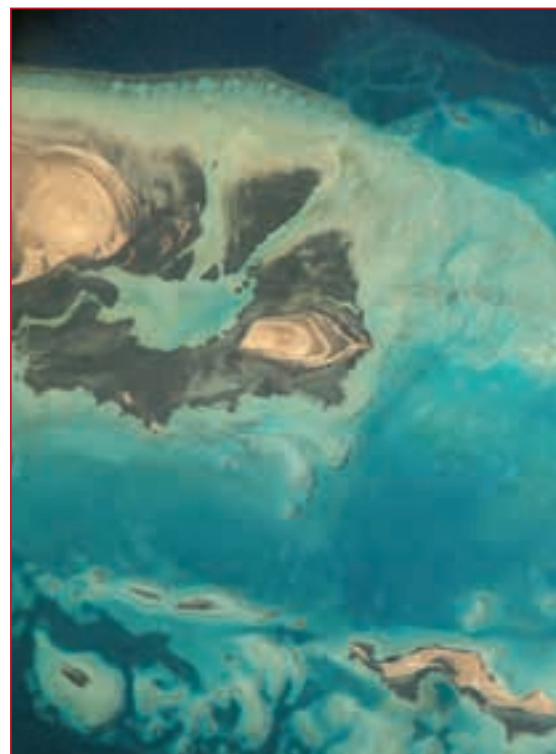
By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.

“Overexploitation is a severe pressure on marine ecosystems globally, and has led to the loss of biodiversity and ecosystem structure. Harvests of global marine capture fisheries have been reduced from the unsustainable levels of a decade and more ago. However, overfishing still occurs in many areas, and fisheries could contribute more to the global economy and food security with more universal commitment to sustainable management policies. This target should be regarded as a step towards ensuring that all marine resources are harvested sustainably.” (CBD 2016e)

The global analysis on progress toward this target mainly focuses on marine fisheries due to lack of information on aquatic invertebrates and plants, and a lack of consistent information on inland waters (SCBD 2014b). The analysed CBD fifth national reports from West Asia are similarly lacking in information and thus tracking progress toward Target 6 is challenging. Some countries, including Iraq, Oman and Yemen, report that fish stocks are threatened and that overfishing persists, but that progress toward this target – albeit insufficient to meet it by 2020 – is being made in terms of imposing restrictions and developing management plans (CBD 2015a).

There are no Marine Stewardship Council (MSC) certified fisheries in the West Asia region (MSC 2015). At the regional level, UNEP-ROWA is supporting the integrated management of ecosystems approach to implement Ecosystem-Based Management (EBM) tools in aquatic and coastal areas, and has developed agreements with the Regional Seas Programme and regional marine organization partners. These Partners are the Regional Organization for the Protection of the Marine Environment (ROPME) and the Regional Organization for the Conservation of the Environment of the Red Sea and Gulf of Aden (PERSGA).

In conclusion, progress towards this target seems limited in the West Asia region. Moreover, there is very little information to base an analysis of progress upon, thus indicating a clear information gap.



Box 6.1: UAE's Efforts in Sustainable Management of Aquatic Living Resources.

(source: Ministry of Environment and Water, UAE 2014)

Sustainable management of important aquatic living resources		
Action	Output	Relevant Aichi Biodiversity Target
Cultivating a number of local species	Maintenance of fish stocks in the country	6

The United Arab Emirates' Ministry of Environment and Water established the HH Sheikh Khalifa Bin Zayed Marine Research Centre in corporation with Ministry of Public Works in early 2015. Here, the latest advanced and innovative technologies are being used to conduct studies related to aquaculture development. The centre is providing fingerling fish to sites along UAE coasts. The establishment of this centre emphasizes that UAE has made great strides in the field of aquaculture and has also laid the foundations for the operation and production of farmed fish through the establishment of necessary policies and requirements for sustainable aquaculture production.

The project strives to reach the strategic goal of enhancing food security. It also produces economically viable aquatic living resources, which include fish species such as the subaiti (*Sparidentex hasta*), sheim (*Acanthopagrus datnia*) and abbit (*Rhabdosargus sarba*). These can be introduced to marine reserves in collaboration with the competent authorities after researching to plan the exact location and best methods to release young fish.



TARGET 7: SUSTAINABLE AGRICULTURE, AQUACULTURE AND FORESTRY

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

“The increasing demand for food, fibre and fuel will lead to increasing losses of biodiversity and ecosystem services if issues related to sustainable management are not addressed. On the other hand, sustainable management not only contributes to biodiversity conservation but can also deliver benefits to production systems in terms of services such as soil fertility, erosion control, enhanced pollination and reduced pest outbreaks, as well as contributing to the well-being and sustainable livelihoods of local communities engaged in the management of local natural resources.” (CBD 2016e)

Globally, around 60 per cent of the available CBD fifth national reports indicated that progress is being made toward this target (SCBD 2014), but that progress was insufficient for it to be met by 2020. In particular, countries often include the sustainable management of agriculture and/or forestry in their NBSAPs, but few have set quantitative targets.

In West Asia, the analysed CBD fifth national reports also show some progress, albeit insufficient to meet the target by 2020. Examples of actions being undertaken can be found in a number of countries in the region: Jordan has established a network of forest stations to observe and control the illegal use of forest resources and is seeking to improve its rangeland management to enhance sustainability (Box 7.1; CBD 2015a). Yemen is also leading in the development of agricultural research, livestock,

forestry and anti-desertification policies; and Oman is aiming to promote sustainable aquaculture by implementing captive breeding programmes for selected fish species. In Lebanon, efforts are being undertaken to revive the ‘Hima’ traditional system of land designation and sustainable management.

At the regional level, international agencies are working together to achieve Target 7, however efforts are fragmented. More coordination is needed across relevant agencies, MEAs and organizations to deliver concerted support to governments in meeting this target.

In conclusion, data to measure this target are limited but there are some examples of progress in different countries. It seems from the national reports that these efforts will deliver progress, but not at a sufficient rate to meet the target.

Box 7.1: Rangeland Protected Area Acts Indicates Progress Toward Several Targets in Jordan.

The “Community-Based Rangeland Rehabilitation Project” was developed and implemented by the Royal Botanical Garden in Jordan in 2007 (Ministry of Environment, Jordan 2014). The project acted as a mediator between government and community agencies, with the major theme being developing sustainable livelihoods for local communities and rehabilitating overgrazed and degraded soils (relevant to Aichi Biodiversity Targets 7, 14 and 18). The project hosted meetings with administrative officials, community leaders and family heads in order to develop sustainable management practices that satisfy all parties, thus reducing conflicts. For example, in order to manage the Tell Ar-Rumman protected area, herding communities were given indirect subsidies in exchange for participation in community-based conservation projects (relevant to Aichi Biodiversity Targets 3 and 18). Thus, the community is able to graze livestock in the area to an extent that satisfies healthy ruminant diets, but prohibits overgrazing, satisfying both the community and the environment. Results have shown that from 2008 to 2010, since the implementation of the project, overall biomass on the Tell Ar-Rumman site has doubled and sheep stocks have tripled. Program analysts suggest that managing grazing over a 30 day period will improve net income by five to eleven per cent per herd per year; an economic incentive of USD 1,234 to USD 1,898 per herd per year. The success of Tell Ar-Rumman has resulted in the subsequent development of 35 rangeland reserves in Jordan, representing different ecosystems with a total area of about 1.3 million hectares, established by the Ministry of Agriculture (relevant to Aichi Biodiversity Target 11). The Ministry has also established fourteen nurseries for the national forest rehabilitation program, with the goal of planting nine million trees and shrubs each year (relevant to Aichi Biodiversity Target 7).

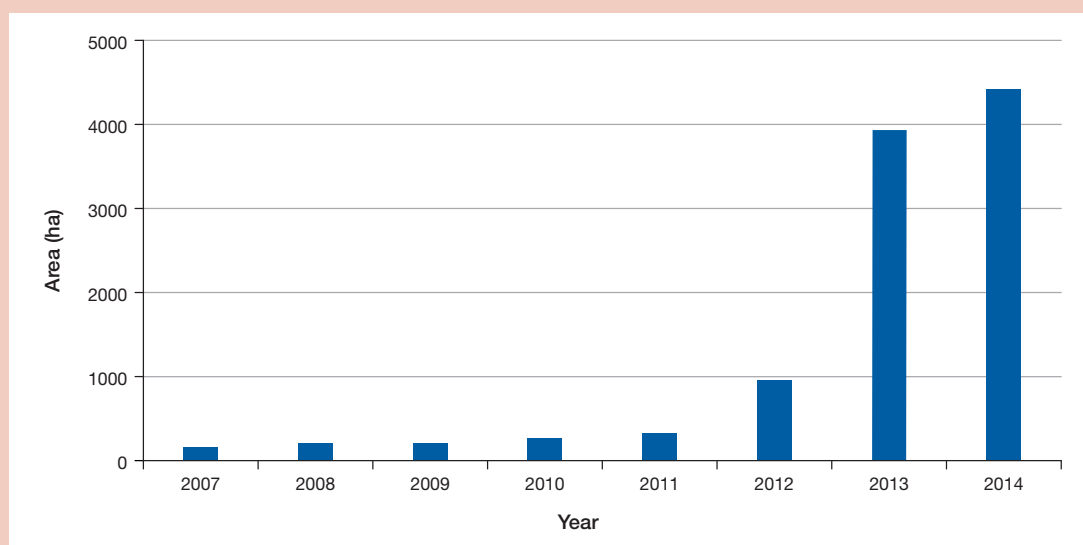
Box 7.2: The United Arab Emirates Accomplishments in Sustainable Agriculture.

(source: Ministry of Environment and Water, UAE, 2014)

The United Arab Emirates accomplishments in sustainable agriculture		
Action	Output	Relevant Aichi Biodiversity Target
Raising awareness for target farmers	Sustainability increment in organic farming areas	7
Sharing knowledge through awareness	Knowledge sharing	1

UAE Ministry of Environment is implementing different projects to achieve sustainable agriculture. These include:

1. Adoption of organic farming: the Ministry implements awareness initiatives and programmes for local farmers and encourages them to adopt organic farming in line with Aichi Biodiversity Target 7. The ministry implements a number of farmers' training programmes to help farmers adopt organic farming, which include: training farmers on the principles of organic farming; training on integrated pest management; soil fertility management; certification and inspection; marketing and promotions initiatives according to the requirements of the market. In addition, the Ministry started a national awareness campaign in coordination with the Ministry of Education to raise awareness among UAE community about organic farming benefits for biodiversity, environmental, social and economic issues. As a result of the ministry efforts, 4,286 hectares of agricultural area are free from chemicals (pesticides and fertilizers), and 54 farm products are produced without pesticide residues. Such efforts also helped to rehabilitate the soil and increase the biodiversity of the farms involved.



Organic agriculture areas in UAE

2. The Ministry of Environment and Water has completed the development of legislation and regulations to control pesticide use, registration and trading, and to cooperate with local authorities over control and distribution of pesticides and their rational use. The Ministry also aims to regulate the entry of pesticides into the country through approved outlets and prevent import and trading of banned pesticides that are highly toxic or have a long-term environmental impacts. A farmer's support program was introduced to reduce the excessive use of pesticides through the cultivation of crop varieties resistant to diseases and biological control, both for greenhouses or vegetables in the fields.
3. The Ministry of Environment is also focused on the deployment of hydroponic techniques (agriculture without soil). This type of agriculture contributes to the reduction of negative effects on the environment caused by conventional agriculture and the use of fertilizers, pesticides or sterilizers. The preservation of forests is also of great importance to UAE, and forest area has increased from 214 thousand hectares in 1990 to 317 thousand hectares in 2010.



TARGET 8: POLLUTION REDUCED

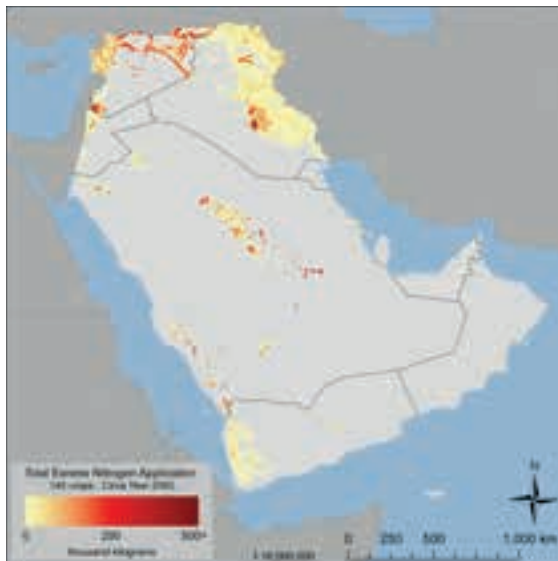
By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.

“Nutrient loading, primarily of nitrogen and phosphorus, is a major and increasing cause of biodiversity loss and ecosystem dysfunction, especially in wetland, coastal and dryland areas. As nitrogen and phosphorus are often limiting nutrients in many ecosystems when they are present in excessive quantities they can result in rapid plant growth which can alter ecosystem composition and function. Humans have already more than doubled the amount of “reactive nitrogen” in the biosphere, and business-as-usual trends would suggest a further increase of the same magnitude by 2050.” (CBD 2016e)

Globally, the excess use of nutrients including nitrogen and phosphorous is preventing global progress toward Aichi Biodiversity Target 8 (SCBD 2014). Although nutrient pollution is being better controlled in regions such as Europe and North America, global trends indicate that progress is moving away from this target overall. Other forms of pollution, including that from chemicals, pesticides and plastics are increasing, but not enough information is available to evaluate global progress toward this element.

Analysed fifth national reports from West Asia match global trends in terms of lacking evidence of much progress towards the target. Industrial pollution poses threats to biodiversity in Yemen, from sources such as petroleum and cement industries. In Oman, efforts have been put into reducing coastline contamination from oil, and research projects on the sources of coastal pollution in Muscat and Batina are paving the way for monitoring and evaluation (Ministry of Environment and Climate Affairs, Sultanate of Oman 2014).

(a)



(b)

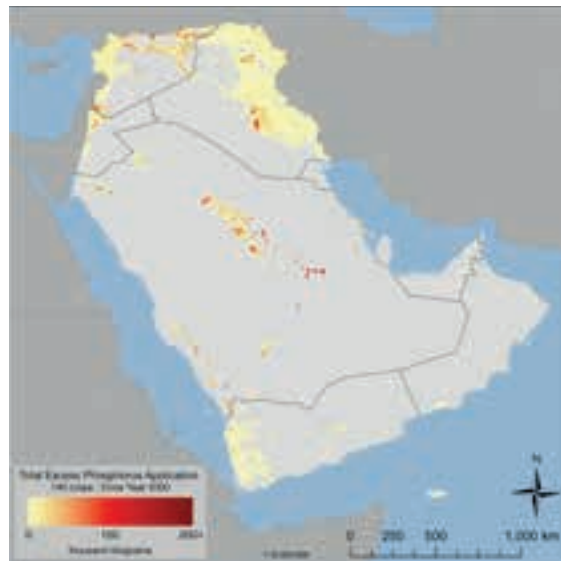


Figure 8.1: Excess nitrogen (a) and phosphorus (b) application in West Asia. Data are based on administrative-level and crop-specific fertilizer application rates modelled at 5' spatial resolution (~10 km) using crop area and yield data as inputs. Given uncertainties in the model estimates at the grid cell scale, interpretation based on broader administrative units is advised (West et al. 2014) (source: Global Landscapes Initiative et al. 2014. Data available at EarthStat.org).

The total nutrient load across the West Asia region has been measured in terms of (a) nitrogen and (b) phosphorus in the year 2000 (Figure 8.1; West et al. 2014). This shows that the highest nutrients loads are in central Saudi Arabia, western Yemen, eastern and northern Iraq, western and northern Syrian Arab Republic and western Jordan. Much of the loss of reactive nitrogen to the atmosphere in the region comes from the production, processing and consumption of food (Figure 8.2).

In West Asia, agricultural activity is largely confined to the fertile crescent of Iraq, Jordan and Syrian Arab Republic. This is an area cultivated since prehistoric times and is bounded to the south by arid desert and to the north by high mountains. There are generally few concentrations of excess nutrients outside these areas and large parts of the region remain unfertilized as they are primarily desert areas with no cultivation.

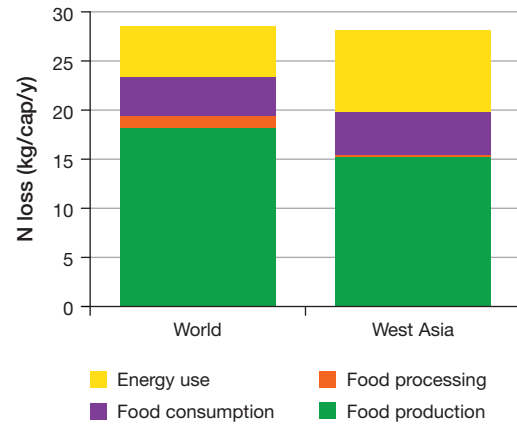


Figure 8.2: Average loss of reactive nitrogen per inhabitant in 2008 (source: International Nitrogen Initiative 2014).

In conclusion, much of this region has low inputs of fertilizer as it is not suitable for agriculture. Where there are suitable soils and available water, there is moderate application of fertilizer, but due to insufficient data it is difficult to establish progress towards the target.



TARGET 9: INVASIVE ALIEN SPECIES PREVENTED AND CONTROLLED

By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.

“Invasive alien species are one of the main direct drivers of biodiversity loss at the global level. In some ecosystems, such as many island ecosystems, invasive alien species are the leading cause of biodiversity decline. Invasive alien species primarily affect biodiversity by preying on native species or competing with them for resources. In addition to their environmental impacts, invasive alien species can pose a threat to food security, human health and economic development. Increasing travel, trade, and tourism have facilitated the movement of species beyond natural bio-geographical barriers by creating new pathways for their introduction. With increasing globalization, the occurrence of invasive alien species is likely to increase unless additional measures are taken.” (CBD 2016e)

Invasive alien species (IAS) are widely known as a major threat to biological diversity, food and water security, and human and animal health. Terrestrial, freshwater, estuarine and marine ecosystems are impacted by the spread of IAS and further problems can be expected in the future. In the IUCN Arab Region, which includes the West Asia region, IUCN has classified 551 species of invasive species ranging from plankton to red palm weevil, cacti species, water hyacinth and numerous fish (UNEP 2010). Among these species, 36 per cent are classified as aliens, whereas 51 per cent are native and the bio-status of 75 species is yet to be determined. Global warming is expected to exacerbate the introduction and spread of IAS.

In West Asia, the information from the fifth national reports indicates that some countries,

including Iraq and Jordan, are making progress towards this target. Both countries have designated resources toward gathering information on IAS by initiating research programmes to compile species lists. In Jordan, this information was used to detail specific research on found species and develop action plans. The successful removal of the common carp (*Cyprinus carpio*) and the catfish (*Clarias gariepinus*), along with the significant population restructuring of two cichlid species (*Tilapia zillii* and *Oreochromis aureus*), allowed for the re-establishment of endemic fish populations (Ministry of Environment, Jordan 2014).

In conclusion, despite some local successes, the information base from the region is insufficient to assess if there is progress towards achieving the target more broadly.



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TARGET 10: ECOSYSTEMS VULNERABLE TO CLIMATE CHANGE

By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.

“Urgently reducing anthropogenic pressures on those ecosystems affected by climate change or ocean acidification will give them greater opportunity to adapt. Where multiple drivers are combining to weaken ecosystems, aggressive action to reduce those pressures most amenable to rapid intervention should be prioritized. Many of these drivers can be addressed more easily than climate change or ocean acidification.” (CBD 2016e)

Globally, the GBO-4 reports that anthropogenic pressures continue to affect threatened ecosystems. Insufficient information on vulnerable ecosystems other than coral reefs limited evaluation of global progress toward this target (SCBD 2014).

Available data from Reef Base shows that many of the coral reefs in the West Asia region are already threatened to various degrees by different activities, and that coral bleaching events mainly due to high sea water temperatures occur (Figures 10.1 and 10.2). However, a regional study for the Gulf Cooperation

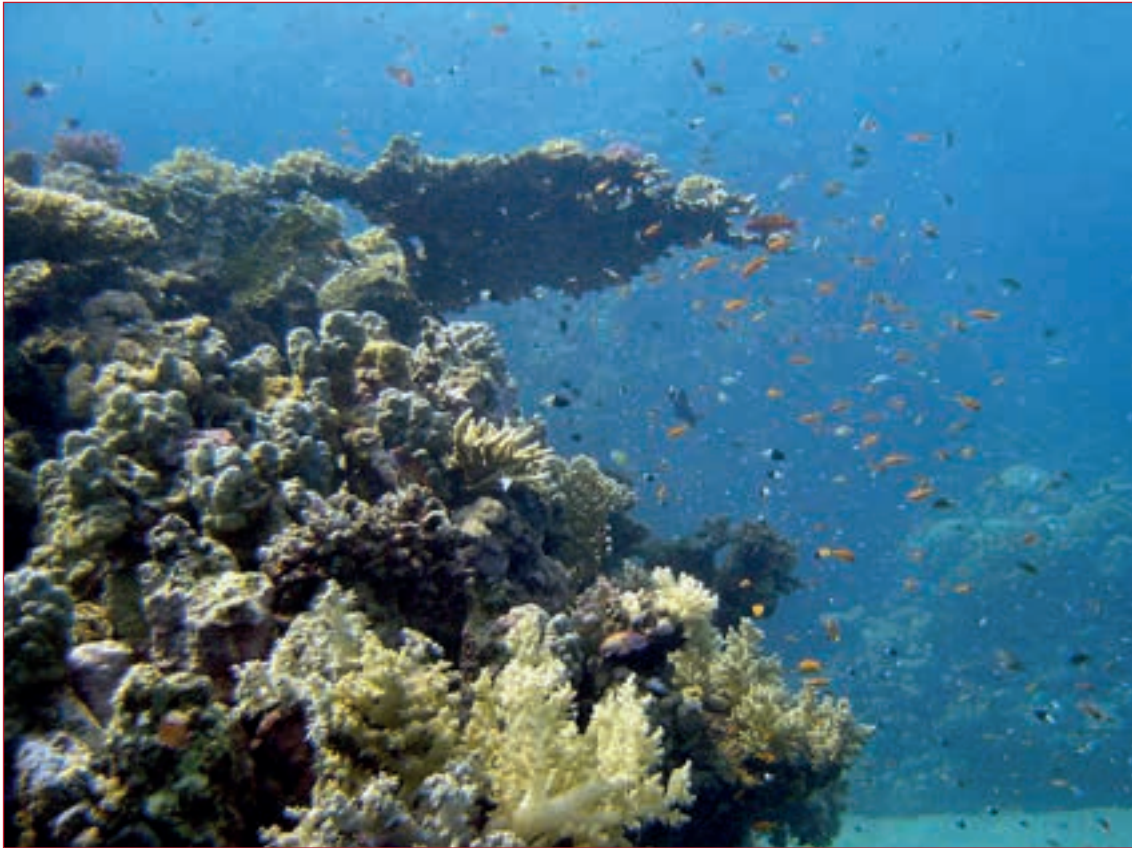
Council (GCC) by the United Nations University Institute for Water, Environment and Health (UNU-INWEH 2011), a region environmentally stressed by high salinity, temperature rise and sedimentation, found that corals, although declining, are adapted to extreme environmental conditions and are surviving at temperatures higher than elsewhere in the world. This suggests that the region contains unique coastal environments, presenting opportunities for climate change adaptation.



Figure 10.1: Degree of threat to West Asian coral reefs (source: Reef Base 2014).



Figure 10.2: Severity of coral bleaching in West Asian coral reefs and areas of high thermal stress in the African oceans (source: Reef Base 2014).



© Mark Goodchild

Among the countries taking action related to this target is Jordan, which has implemented the Aqaba Special Economic Zone Authority (ASEZA)/UNDP (UNDP 2014). The project focuses on raising awareness and improving knowledge on the protection of coastal ecosystems. Among its main accomplishments are the translocation of corals and the development of a public strategy that addresses the sustainability of marine and coastal environments in Aqaba (Ministry of Environment, Jordan 2014). Future plans include the development of a *State of the Coast* publication, an evaluation of Jordan's marine biodiversity and ecosystem services, developing a Marine Spatial Plan for ASEZA and implementing a coral translocation plan.

Actions relevant to this target are also being taken by Oman where efforts have been undertaken to combat desertification by limiting grazing to non-sensitive areas, rehabilitating rangelands, improving soil capability, reducing overharvesting and thus maintaining green cover, regulating water extraction and placing buoys along coastal areas to reduce the destructive use of anchors (Ministry of Environment and Climate Affairs, Sultanate of Oman 2014).

In conclusion, the coral reefs in the West Asia region are under considerable stress, but seem to have adapted to withstand higher temperatures than in other regions. Trends in climatic impacts on reefs and other vulnerable ecosystems in the region are generally not available.



TARGET 11: PROTECTED AREAS

By 2020, at least seventeen per cent of terrestrial and inland water, and ten 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.

“Well-governed and effectively managed protected areas are a proven method for safeguarding both habitats and populations of species and for delivering important ecosystem services. Particular emphasis is needed to protect critical ecosystems such as tropical coral reefs, sea-grass beds, deep-water cold coral reefs, seamounts, tropical forests, peat lands, freshwater ecosystems and coastal wetlands. Additionally, there is a need for increased attention to the representativeness, connectivity and management effectiveness of protected areas.” (CBD 2016e)

Protected areas are widely regarded as one of the most successful tools for conserving nature (Geldmann et al. 2013). Aichi Biodiversity Target 11 includes several elements, including area coverage, effective and equitable management, representativeness, and connectivity.

Global trends indicate that protecting seventeen per cent of terrestrial and inland waters is on track (Tittensor et al. 2014), and global marine and coastal protected area coverage is at 8.4 per cent, close to Aichi Biodiversity Target 11's requirement of ten per cent (Juffe-Bignoli et al. 2014).

By August 2014, the World Database on Protected Areas (UNEP-WCMC 2014) included 313 protected areas in the twelve countries and territories that comprised the West Asian region (Figure 11.1). Many of the sites in the region are stored as point, rather than polygon records, indicating the relatively poor reporting of protected areas from countries in the West Asia region to the WDPA.

Protected area coverage in the West Asia region has been increasing since 1990 (Figure 11.2), but with relatively little change since 2010 when the *Strategic Plan for Biodiversity 2011-2020* was adopted. The terrestrial coverage underwent a significant increase between 1992 and 1994 and has been growing more slowly since. The marine coverage, although very low, has been continuously growing since 1990 (Figure 11.3).

More than one quarter of the countries and territories in region have met the seventeen per cent target for terrestrial and inland waters, including Kuwait, Saudi Arabia and UAE. Only Jordan and UAE exceed protection of ten per cent of coastal and marine areas, and Yemen has exceeded the target for Marine Protected Area (MPA) coverage according to the National Focal Point (NFP) (Klaimi 2015). Due to reporting gaps it may be difficult to assess the progress of all countries in the region; for example Saudi Arabia has made significant effort nationally but this has not yet been captured in global databases. While progress in protected area coverage in the West Asia region is positive, protected area coverage in some countries is low and further action needs to be taken if the region is to meet Target 11 by 2020.

The NBSAPs from the region indicate that most countries have targets concerning the coverage of protected areas, whereas fewer focus on ecological representation, connectivity and effective and equitable management (SCBD 2014). In West Asia information from the fifth national reports to the CBD suggest that trends are improving. However further efforts will be required if the target is to be met by 2020. Among the countries taking action towards this target are Iraq, where cooperation between local ministries and international organizations has prompted the development of a protected area network with focus on management effectiveness (Ministry of Environment, Republic of Iraq 2014). Furthermore, Jordan's fifth national report indicates that progress in terms of the protected area's representativeness, connectivity and management, is being made (Ministry of Environment, Jordan 2014).



Figure 11.1: Protected Areas in the West Asia region found within the World Database on Protected Areas (WDPA 2015). Protected areas reported as points are not included in this map although they were considered for analyses (source: IUCN and UNEP-WCMC 2015).

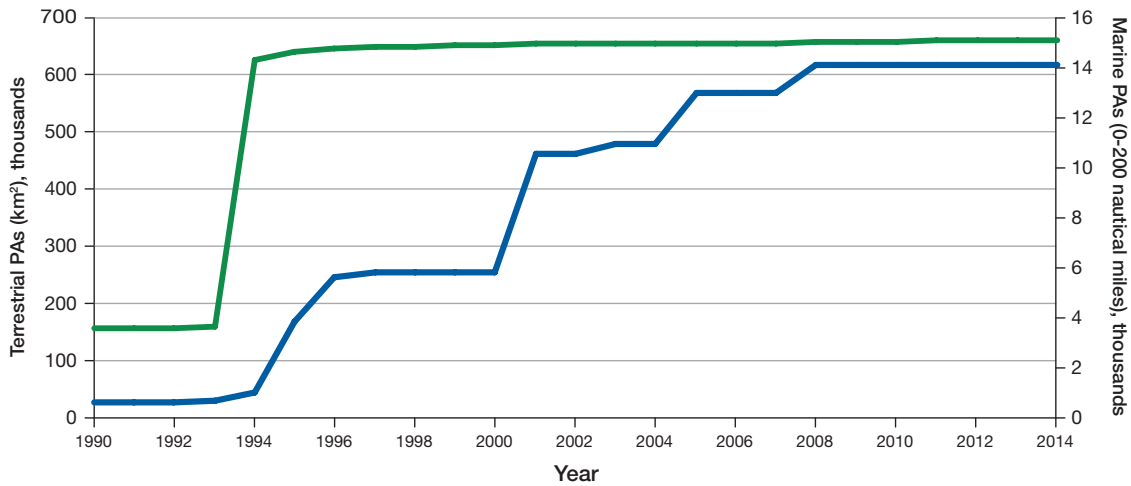


Figure 11.2: Trends in terrestrial (green) and marine (blue) protected area coverage (square kilometres) over time in the West Asia region (source: UNEP-WCMC 2014).

Target 11 also calls for the conservation of “areas of particular importance for biodiversity”. Only one network of such sites has been systematically identified in the West Asia region. Important Bird & Biodiversity Areas (IBAs) contribute significantly to the global persistence of biodiversity and 235 sites, have been identified for the region. While the coverage of these sites by protected areas has grown in recent decades (Fig 11.3), at present only twelve

per cent of IBAs in the region are completely covered by protected areas (Brooks et al. 2016). No Alliance for Zero Extinction sites (AZEs), which effectively hold the entire population of at least one species of mammal, bird, amphibian, reptile, conifer, or reef-building coral species assessed as Critically Endangered or Endangered on the IUCN Red List, have yet been identified for this region.

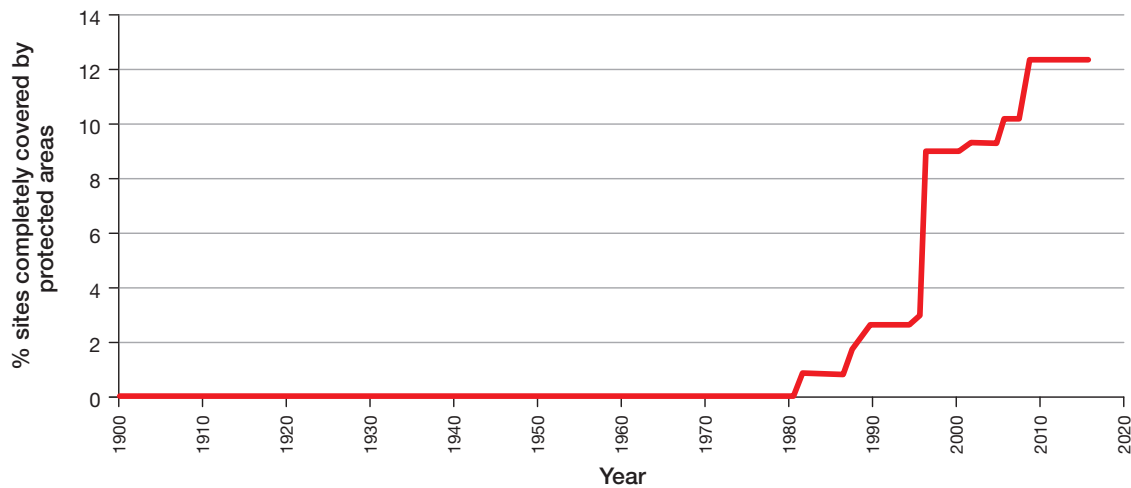


Figure 11.3: Trends in the percentage of West Asia Important Bird and Biodiversity Areas that are completely covered by protected areas (source: Brooks et al. 2016).

In terms of internationally designated sites, as of August 2014, seven out of twelve countries in the West Asia region have designated fourteen Ramsar sites, covering 1,789.9 square kilometres. Among the countries of the region, Lebanon and the United Arab Emirates have the highest number of Ramsar sites included in the WDPA, with four sites each covering respectively 14.2 and 153.14 square kilometres.

In conclusion, although in the past decade many countries in the West Asian region have designated new protected networks that are making a positive contribution towards the terrestrial and marine coverage elements of Aichi Biodiversity Target 11, further actions are required to expand protected areas in some countries. There is insufficient information to assess progress towards the other elements of the target, namely management effectiveness, representativeness and connectedness.

Box 11.1: The United Arab Emirates Establishes the “Wadi Wurayah National Park” as its First Mountain Protected Area.

(source: Maral Khaled Chreiki 2014)

Action	Output	Relevant Aichi Biodiversity Target
Educational activities for local communities	Awareness of biodiversity values	1
New Protected Area	Incorporated in National planning	2
Wadi Wurayah Protected Area	Increasing protected areas	11
Broaden biodiversity knowledge base	Extinction prevented	12
Sustainable use and appropriate legislation	Ecosystem services such as water restored	14
Wadi Wurayah Protected Area	Increase ecosystem resilience	15
Educational activities for local communities	Engagement of local communities in preserving the protected area	18

Wadi Wurayah National Park in Fujairah covers an area of 200 square kilometres of the Alhajar Mountain range, which shelters a rich diversity of rare and endangered habitats and species. A three-year project to establish the National Park was managed by Fujairah Municipality and the Emirates Wildlife Society – World Wide Fund for Nature, with financial support from HSBC Bank Middle East.

One of the most striking features of the national park is its freshwater wetland area. This freshwater wetland is one of few remaining in the region, which qualified it to be registered on the Ramsar list of internationally important wetlands. The Wadi Wurayah National Park protects natural and cultural values, and it contributes to the sustainable development of the country. The Park hosts a number of rare and endangered species, such as the Arabian Tahr, *Arabitragus jayakari*, which is listed as Endangered in the IUCN Red List of Threatened Species. Fewer than 2,000 of these magnificent wild goats remain and are all found only in the Hajar Mountains in Oman and Wadi Wurayah in UAE. The wetlands also shelter the *Garra barreimiae*, which is a regionally endemic fish, listed as Vulnerable by IUCN. In addition, 455 species of insects, ten species of spiders, one species of pseudo-scorpion and one species of woodlice have been recorded. Furthermore, the park has a number of archaeological sites that have an intrinsic cultural value, making it a great venue for ecotourism. The establishment of Wadi Wurayah National Park was part of the Fujairah Emirate 2040 development vision, and the park continues to involve the local community through a wide range of educational activities.

Box 11.2: Lebanon Designates More Nature Reserves and Protected Forests.

(source: Elsa Sattout 2014)

Action	Output	Relevant Aichi Biodiversity Target
Update legislative frameworks on Protected Areas	Awareness of biodiversity values	1
New Protected Areas	Incorporated in National planning	2
New Protected Areas	Increasing protected areas	11
New Protected Areas	Increase ecosystem resilience	15

Lebanon has successfully designated 67 protected areas, which were classified and protected to varying degrees (Sattout et al. 2012). These protected areas include thirteen nature reserves (23,000 hectares), and eleven forest ecosystems and other woodlands (7,000 hectares) that fall under the stewardship of the Lebanese Ministry of Environment. Classifying and declaring ecosystems as protected areas contributes to the conservation and restoration of these sites, and it asserts the value of Lebanon's diverse ecosystems. In 2015, an MPA was also declared in Lebanon.

Lebanon's state owned forestlands account for 27.3 per cent of the total forest cover while communal lands constitute 11.6 per cent (Forest Resource Assessment 2010), and the Ministry of Agriculture is the lead government agency responsible for the protection and management of these forest resources.

The Ministry of Environment and the Council for Development and Reconstruction have integrated four categories of protected areas adapted to the Lebanese context, including natural park, nature reserve, natural monuments and Hima. Other categories include Biosphere Reserve, Ramsar site, World Heritage Site, and Important Bird Area (Sattout 2013).

With these classifications, there is a need to update current legislative frameworks, and for this reason a new draft Framework Law for Natural Reserves was formed and approved by the Council of Ministers. The draft law will ensure a sustainable funding mechanism which would have a positive impact on the eco-tourism sector.



Flower from Lebanon's Flora (Photo credit: Elsa Sattout)

Box 11.3: State of Palestine's Wadi Al-Ghaf Protected Area.

(source: Mohammad Mahasna 2014)

Action	Output	Relevant Aichi Biodiversity Target
New Protected Areas	Awareness of biodiversity values	1
New Protected Areas	Incorporated in National planning	2
New Protected Areas	Increasing protected areas extent	11
Management Plan	Increase ecosystem resilience	15

The Palestinian Environmental Quality Authority has developed a new ecosystem management plan for Wadi Al-Ghaf Protected Area to conserve it as a national park. This protected area is located south of the West Bank along the Taweel Valley near the city of Al-Khalil, and covers around 1,000 hectares. Wadi Al-Ghaf protects many species, including a species of bat that resides in the Safa Caves and attracts many visitors. The site hosts a wealth of other wildlife including wolf, hyena, deer, porcupine, fox and hedgehog, while the rich vegetation covers and preserves the soil and humidity. There are over 45 kinds of plants and trees in the area, including oak trees, pine trees, maple trees, and sagebrush. The area is also rich in freshwater and local communities rely on it for agriculture.

The new ecosystem management plan includes eight programmes: a natural reserve directorate, the biodiversity protection and restoration, ecotourism, environmental education, fire control, socio-economic support for local communities, and environmental monitoring. The new management plan holds great prospects in maintaining the ecological balance in the area, as it also helps to prevent overgrazing, over-fishing, and deliberate fires.

Box 11.4: Protected Area Establishment in the United Arab Emirates.

(source: Ministry of Environment and Water, UAE 2014)

Action	Output	Relevant Aichi Biodiversity Target
Sending awareness and land surveying	Increment in protected area sites	11
Sharing knowledge through awareness	Knowledge sharing	1

UAE has made various achievements under Aichi Biodiversity Target 11. UAE's NBSAP states that "By 2021, twelve percent of terrestrial areas and inland waters, and 14 of coastal and marine areas are conserved, through, a representative network of protected areas and with effective management, taking into account, as appropriate, sites of particular importance for biodiversity and ecosystem services".

UAE has increased its coverage of protected areas over time and provides training to local authorities responsible for protected areas through workshops aimed at enhancing management effectiveness. Through these efforts UAE was able to rank 15th in the Environmental Performance Index (EPI) in 2014, which grades country performance on high-priority environmental issues within the areas of protection of human health and protection of ecosystems (Yale University 2016), however the country has dropped to an EPI ranking of 92 in 2016. Furthermore, UAE increased the number of Ramsar sites by three to five in 2014 and created its first MPA in 2014.

UAE continues to improve the management effectiveness in the protected areas and increase awareness among the local communities by providing workshops and using global events, such as wetland day, to spread knowledge among local people.



TARGET 12: REDUCING RISK OF EXTINCTION

By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.

“Though some extinctions are the result of natural processes, human actions have greatly increased current extinction rates. Reducing the threat of human-induced extinction requires action to address the direct and indirect drivers of change (see the Aichi Biodiversity Targets under Goals A and B of the Strategic Plan for Biodiversity 2011-2020) and can be long term processes. However, imminent extinctions of known threatened species can in many cases be prevented by protecting important habitats (such as Alliance for Zero Extinction sites) or by addressing the specific direct causes of the decline of these species (such as overexploitation, invasive alien species, pollution and disease).” (CBD 2016e)

At the global scale, current trends indicate that Target 12 will not be met by 2020 and that the extinction risk for several taxonomic groups has not decreased since 2010 (SCBD 2014). Information from the fifth national reports for West Asia indicate that some countries are making progress towards this target. For example Jordan and Yemen, are making progress in terms of updating species lists and assessing conservation status, improving baseline data from which strategies can be produced (CBD 2015a).

Trends in the Red List Index for the region show that there is overall decline (meaning enhanced extinction risk) in the West Asia region (Figure 12.1). The regional decline during the period 1994-2004 was greater than global decline. However, recently, the regional rate of decline has slowed, whereas the global trend has accelerated in recent years.

Funding for species conservation provided from development agencies for the region peaked in 2004 and has declined until 2010 when the last data are available (Figure 12.2).

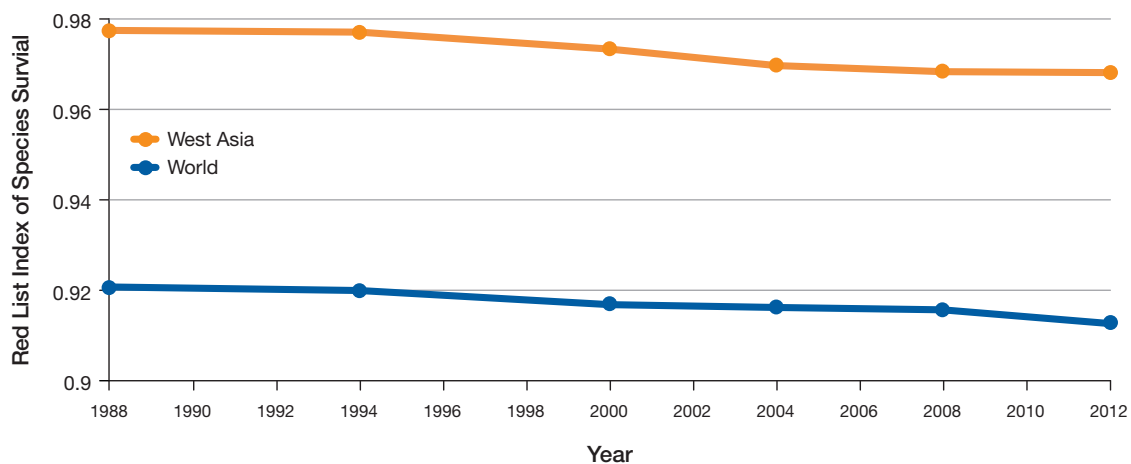


Figure 12.1: IUCN Red List Index of species survival for birds (1988-2012). A Red List Index value of 1.0 means that all species are categorized as 'Least Concern', and hence none are expected to go extinct in the near future. A value of zero indicates that all species have gone extinct (source: Birdlife International, 2015a).

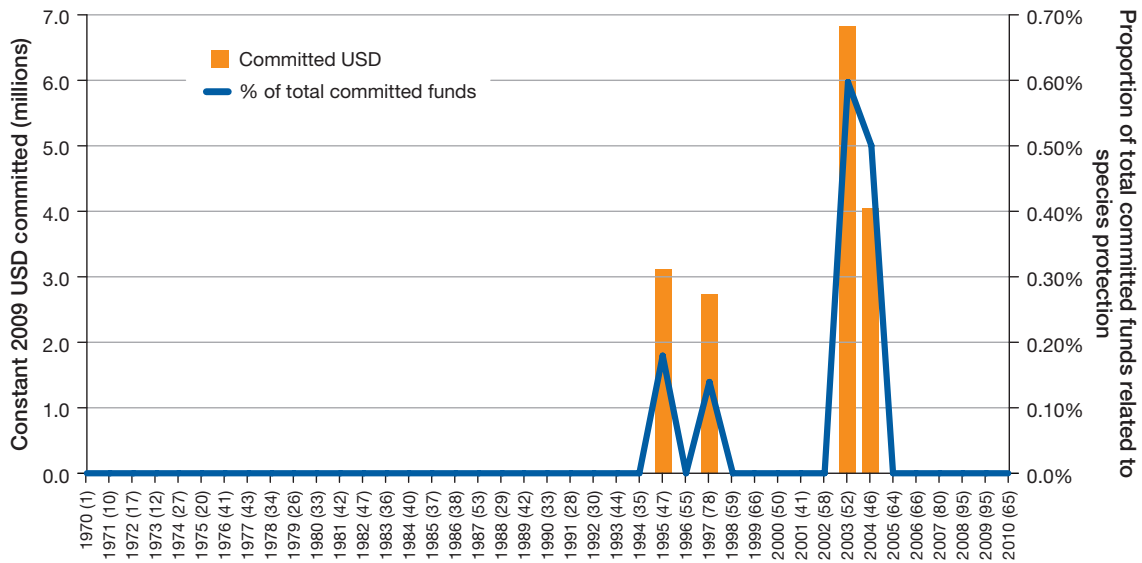


Figure 12.2: Absolute and proportional investment in species protection by donors on AidData between 1970 and 2010 (source: Tierney et al. 2011).

Box 12.1: Yemen and Neighbouring Arab Countries Work Together to Organize Conservation Efforts.

Yemen has taken the initiative in organizing conservation efforts to protect rare species of plants, animals and birds (Ministry of Water and Environment, Republic of Yemen 2014). Cooperative efforts between Yemen and the Al-Sharjah Emirate in the United Arab Emirates include the *ex situ* breeding of the leopard (*Panthera pardus*) and Arabian bustard (*Ardeotis arabs*). In Yemen, the Marine Research Centre was able to breed and cultivate small shrimp in their laboratory, though it was unsuccessful in reintroducing them to the wild to make up for loss of natural stock.

Box 12.2: The United Arab Emirates Projects in Protecting Threatened Species.

(source: Ministry of Environment and Water, UAE 2014)

UAE projects protecting threatened species		
Action	Output	Relevant Aichi Biodiversity Target
Legislation and laws	Protecting threatened species	12
Sharing knowledge through awareness	Knowledge sharing	1

The UAE has developed several projects to protect threatened species within the NBSAP of the country. The overall aim by 2021 is to develop and implement programmes to improve the conservation status of 70 per cent of the more threatened species as a contribution to achieving Aichi Biodiversity Target 12. Key initiatives are outlined below:

1. The Mohamed bin Zayed Species Conservation Fund aims to preserve the wildlife and biodiversity and raise the level of importance of species conservation through different projects. Some projects provide financial support for field actions that make a difference on the ground and contribute to the survival of species. Other projects aim to raise the level of awareness of conservation of living organisms and stimulate interest among young people in the field of natural sciences. The endowment fund can support projects on all living things around the world without prejudice or discrimination. It is currently working to provide financial support to projects aiming to maintain endangered plants, animals and fungi, according to the approval of an independent commission. The fund covers all the continents of the world and during 2010-2013 supported projects in different continents as follows: Africa (117) - Asia (104) - Europe (11) - North America (48) - South America (44).
2. Protection of endangered marine turtles, where the Emirates Wildlife Society in association with the World Wide Fund for Nature (EWS-WWF) keeps track of hawksbill turtles across the Gulf and monitors behaviour and movement patterns using satellite tags on around 75 turtles. In addition, there is support to preserve some reserves as a centre for breeding, for example Yasat natural reserve in Abu Dhabi and Sir Bongar natural reserve in Sharjah.
3. The International Fund for Houbara Conservation, which aims to continue to implement the vision of the late Sheikh Zayed bin Sultan Al Nahyan to restore sustainable numbers of Houbara birds in UAE. The Fund has expanded the application of this vision to play a leading role in maintaining the Houbara throughout its range in different countries and regions. From 1996 the Fund has supported breeding centres that have bred: 48,887 Asian Houbara and 111,336 North African Houbara, and released 9,528 Asian Houbara and 65,587 North African Houbara.

In conclusion, the status of species in the West Asia region is declining and the funding from international sources is modest. However, some of the countries in the region are undertaking targeted programmes to reverse declines in key, iconic species,

and there are some significant success stories. National resources are being deployed to help and given the wealth of some countries in the region there is reason to expect further gains in some species populations in the coming years.

Box 12.3: Mainstreaming Biodiversity into Economic Sectors Along the Rift Valley: The Migratory Soaring Birds (MSB) Project.

(source: BirdLife International 2014)

Action	Output	Relevant Aichi Biodiversity Target
Production of knowledge	Awareness	1
Hotspots included in National Land Use Maps	Incorporated in National planning	2
Hotspots included in National Land Use Maps	Increased Protected Areas	11
Better known threatened species	Extinction prevented	12
Knowledge improved	Sharing	19

The Rift Valley/Red Sea Flyway is the second most important flyway in the world for migratory soaring birds. Annually, over 1.5 million soaring birds, including raptors and storks, migrate from winter grounds in Africa to breeding grounds in Europe and Central Asia and vice versa. Yet this area is also subject to huge development pressures, as increased demands for energy, food supply, and tourism lead to significant changes in land use. Indiscriminate hunting and illegal killing of birds is also widespread, all creating an increasingly inhospitable environment for these birds.

The Migratory Soaring Birds Project aims to integrate conservation of soaring birds into key sectors namely Agriculture, Energy, Hunting, Tourism and Waste Management. BirdLife International is working with a range of stakeholders and national BirdLife Partners to ensure the continued viability of the flyway. The project is also supported by the GEF and the UNDP.

The project has developed guidance materials for the renewable energy sector and an innovative web-based mapping tool, the 'Soaring Bird Sensitivity Mapping tool', designed to give developers, planning authorities and other stakeholders access to information on distribution of soaring birds that are likely to be sensitive to infrastructural developments within the region.

By reducing the pressures on 37 species, including five globally threatened ones, this project will make a significant contribution, at various levels, to the achievement of Aichi Biodiversity Target 12 and by developing and experimenting mainstreaming strategies and approaches, it will also be contributing to Aichi Biodiversity Target 2, offering lessons on how development and economic sectors can benefit from sustainable practices.

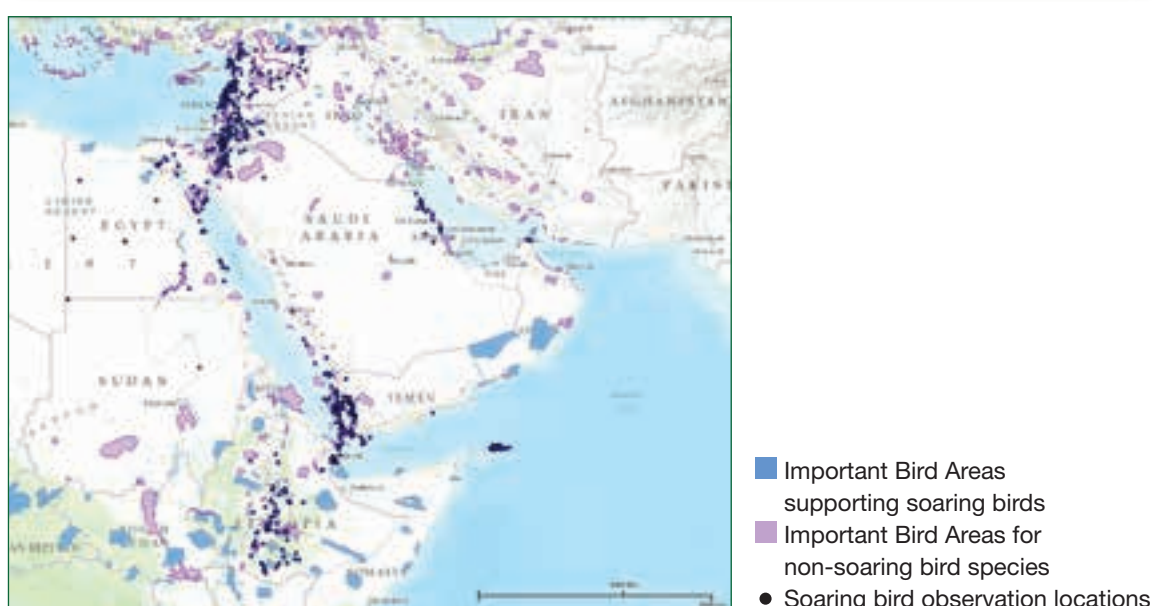


Figure 12.4: Soaring Bird Sensitivity Map (source: BirdLife International 2015b).



TARGET 13: SAFEGUARDING GENETIC DIVERSITY

By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.

“The genetic diversity of cultivated plants, farmed or domesticated animals and of wild relatives is in decline as is the genetic diversity of other socio-economically and culturally valuable species. The genetic diversity which remains needs to be maintained and strategies need to be developed and implemented to minimize the current erosion of genetic diversity, particularly as it offers options for increasing the resilience of agricultural systems and for adaptation to changing conditions (including the escalating impacts of climate change).” (CBD 2016e)

The risk of extinction for local and transboundary - regional and international - breeds in the West Asia region was analysed using data provided by FAO (2015), calculated based on population size as described by FAO (2007) and reported to the Domestic Animal Diversity Information System, (DAD-IS) as of August 2015.

A global total of 126 breeds have been reported in West Asia, including 96 local breeds and 30 transboundary breeds. When considering the risk status of transboundary breeds, West Asia is representative of the worldwide situation, with 60 per cent of breeds ‘not at risk’, and 40 per cent with an ‘unknown’ risk status (Figure 13.1). No transboundary breeds were reported as ‘at risk’ in the West Asia region.

In terms of local breeds, these data demonstrate the lack of information regarding their risk status in West Asia, with 99 per cent of breeds having a status of ‘unknown’, and only one breed reported as ‘not at risk’. Globally, the percentage reported as ‘unknown’ is lower (64 per cent). This shows an urgent need to collect basic data for local breeds in the region, and to make them available to the DAD-IS.

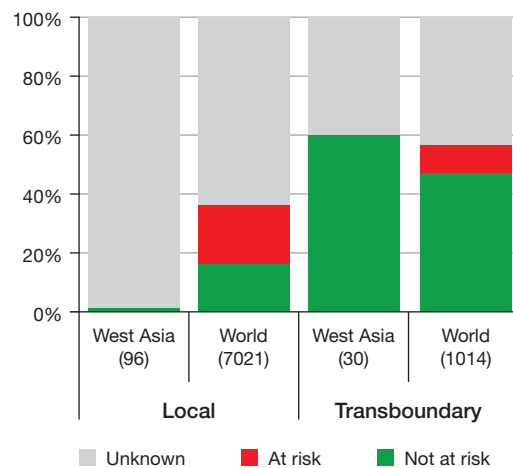


Figure 13.1: Percentage of breeds at risk of extinction in the West Asia region and the world, for both local and transboundary breeds. The absolute numbers for each category are included in brackets (graph produced using data from DAD-IS (FAO 2015)).

It should be noted that the results presented in this report and in the Status and Trends for Animal Genetic Resources reports published by FAO every second year (e.g. FAO 2014; FAO 2012; FAO 2010) are not directly comparable, as these reports are based on older data-sets. In addition, the definition and scope of the West Asia region used by FAO and UNEP are different, also impeding direct comparison.

In conclusion, data are limited in the region to measure progress towards the achievement of this target. However, it does not seem that breeds are particularly at risk in this region and in that regard genetic diversity is being safeguarded.

Box 13.1: Oman Implements the Cartagena Protocol for Biosafety.

(source: Maryam Busaidi and Thuraya Al-Sariri 2014)

Oman Implements the Cartagena Protocol for Biosafety		
Action	Output	Relevant Aichi Biodiversity Target
Regulating the transboundary movement of GMOs and LMOs	Safeguarding genetic diversity	13
Implementation of protocols and frameworks	Biodiversity strategies and action plans	17

Oman signed the Cartagena Protocol for Biosafety in 2007, an international treaty governing the movements of living modified organisms resulting from modern biotechnology from one country to another. It was adopted on 29 January 2000 as a supplementary agreement to the CBD and entered into force on 11 September 2003 (CBD 2003).

Oman released its Second National Report on the implementation of the Cartagena Protocol for Biosafety in January 2013. This report includes a legal framework that regulates the trans-boundary movement of Genetically Modified Organisms (GMOs), and Living Modified Organisms (LMOs). Oman also developed a national biosafety framework in 2014.



TARGET 14: ECOSYSTEM SERVICES

By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.

“All terrestrial, freshwater and marine ecosystems provide multiple ecosystem services. However, some ecosystems are particularly important in that they provide services that directly contribute to human wellbeing by providing services and goods to fulfil daily needs. Actions taken to protect and restore such ecosystems will have benefits for biodiversity as well as human wellbeing.” (CBD 2016e)

The fifth national reports to the CBD provided by West Asian countries suggest that most countries are aware of the importance of conserving ecosystems, due to reliance on the services they provide and the implications their destruction has on the needs of peoples. Some countries, for example Yemen, highlight the need for an improved understanding of how ecosystems provide these services and are sustainably managed, as this could improve planning and development of strategies for preservation. Most analysed countries in West Asia are making little to no progress toward meeting this target. Jordan shows some progress toward this target in the implementation of the Community-Based Rangeland Rehabilitation project – see case 7.1 under Target 7 in this document (CBD 2015a).

For the marine realm, the Ocean Health Index (Halpern et al. 2015) can be used to provide a measure of various aspects of ocean health and its changes over time. Within this region, livelihoods and economies, biodiversity, food provisioning and clean water all score above 70 (Figure 14.1). In West Asia there are a number of ocean health attributes that are lower than the global average, such as natural products, carbon storage and tourism and recreation. Ones above the global average are food provision, livelihoods and, marginally, marine biodiversity (Figure 14.2).

In conclusion, it is extremely hard to measure progress on this target in the region, and there is only fragmentary evidence of progress from some countries.

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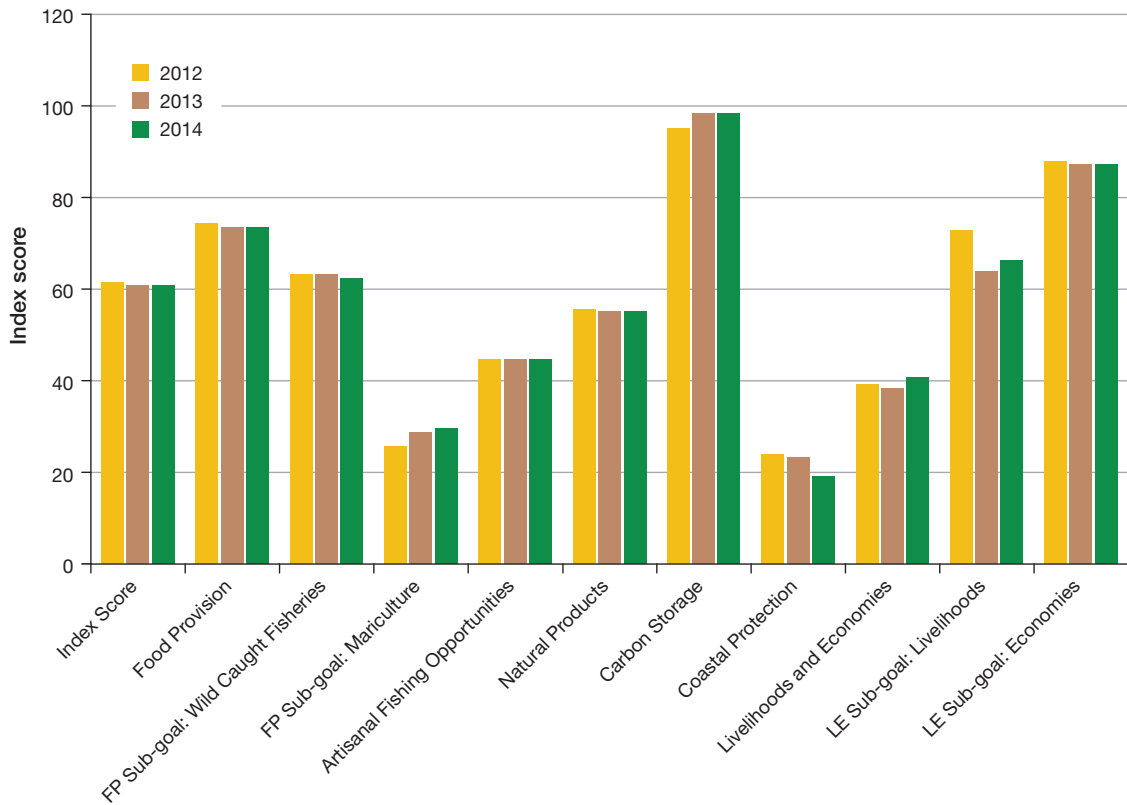


Figure 14.1: Comparison of the Ocean Health Index's ten goal scores and the overall average score between 2012 and 2014 aggregated from the average of its exclusive economic zone (EEZ) area-weighted country scores (source: Ocean Health Index 2015).

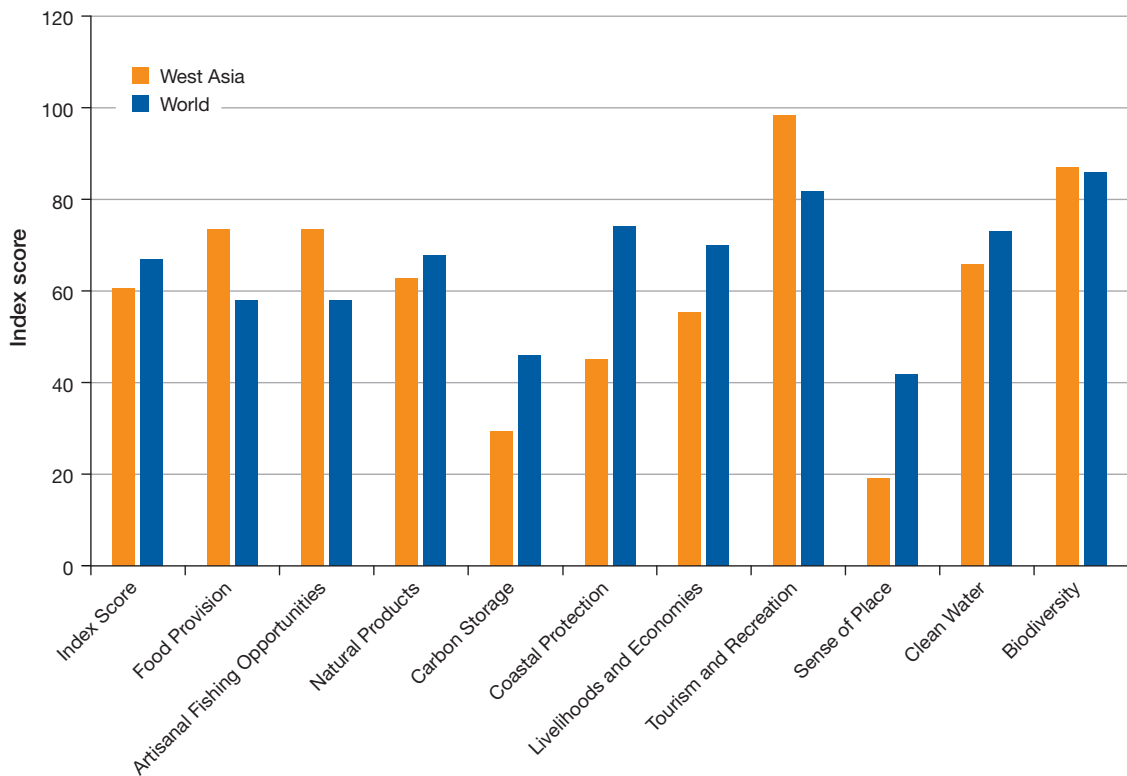


Figure 14.2: Comparison of the Ocean Health Index's ten goal scores and the overall average score for West Asia and the world in 2014 (source: Ocean Health Index 2015).

Box 14.1: Bahrain Adopts the Ecosystems Approach.

(source: Fouad Abousamra and Nouf Al-Wasmi 2014)

Action	Output	Relevant Aichi Biodiversity Target
Adopting the ecosystem approach to conserve pearling sites	Incorporated into national planning	2
Protecting the pearling sites through sustainable use	Degradation and rate of loss of habitats reduced	5
Sustainable use of oyster ecosystems	Fisheries managed sustainably	6
Effective management and legislations	Pollution reduced	8
Conserving pearling sites	Multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning	10, 15
Expand protected areas	Protected areas expanded	11
Ecosystem restoration and functioning	Essential ecosystem services restored and produced	14
Ecosystem assessment	Knowledge sharing	19

Bahrain has embarked on a mission to adopt the ecosystems approach to implement effective actions to conserve biodiversity in marine ecosystems in a coherent and integrated manner. The CBD defines the ecosystems approach as “a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way”. This approach will be integrated into the environmental management of four pearling areas, which are also proposed protected areas: Najwat Bulthama and Hairat Bulthama, Chtiah and Bouamama. The project partners include Bahrain’s Supreme Council for the Environment, United Nations Environmental Program – Regional Office for West Asia, the Food and Agriculture Organization and the Bahraini Ministry of Culture.

The project is divided into two phases; the first included updating the national environmental policy and strengthening the national capacity building efforts, while the second phase encompassed preparing an environmental management plan for the four protected areas following the ecosystems approach. Capacity building efforts included conducting three workshops with local stakeholders, in addition to undertaking a number of environmental surveys and studies. UNEP has agreed to support the development of an operational work plan to ensure stakeholder engagement in the management and monitoring of the sites in a participatory and inclusive process.

Box 14.2: Impact of Syrian Refugee Crisis on Ecosystem Services in Jordan.

Several surveys and studies indicate that Jordan's land is at the threat of high rate of degradation. The process has been accelerated by unsupervised management and land use practices of overgrazing, cultivation and ploughing of marginal soils and woodland removal in the high rainfall zones. The regions of irrigated highlands and the Jordan Valley are also affected by aspects of salinization and alkalinization of soil. In addition to human induced factors, climatic factors of irrational rainfall and periodic droughts are contributing to the problem.

Currently Jordan is hosting upwards of 1.4 million Syrians, of whom 646,700 are refugees. Eighty-five per cent of refugees live outside camps in some of the poorest areas of the country, and a significant proportion are classified as extremely vulnerable. The case for the refugees outside the designated camps is complex to assess with regard to interaction with ecosystems and their associated biodiversity. Nonetheless, evidence has been established on a number of associations between the influx of refugees and the impacts on natural resources. For example, many refugees who come from nomadic or rural backgrounds got involved with livestock husbandry and agricultural activities, mainly through employment by Jordanian residents who utilized the refugee work force to support their agriculture related activities, as well as the operation of nature-based tourism enterprises. It could also be noted that the labour introduced by the refugees created more pressures on ecosystem goods and services such as; 1) grazing within and in surrounding of the protected areas, 2) wood cutting for heating and charcoal production purposes, 3) excessive collection of medicinal plants from wilderness areas, 4) excessive farming activities that eventually lead to extra pressure on agricultural land and 5) cross border movement of livestock increase the pressure on the rangeland ecosystems and in the animals and human health.

The increasing competition over natural resources adds pressure on protected areas in the northern and eastern parts of the country. One clear example is the increasing trend of illegal tree cutting to compensate for higher fuel prices, overgrazing of livestock in response to inability to secure high cost fodder and food security for the Jordanian inhabitants and refugees, and illegal wildlife hunting as a reflection of reduced ability to procure domesticated sources of meat such as chicken and lamb, this is evident by increase in number of cases sent to the court for wildlife violations, for instance in 2014, the number of cases that were sent to court is unprecedented, equal to 1483 cases, of which 572 cases for illegal wood cutting, illegal grazing 75 cases, illegal hunting 84 cases, forest fire 25 cases and 727 cases for other wildlife violations (agricultural and land encroachment), (MOPIC: Vulnerability Assessment 2014).

Furthermore, several studies have researched the environmental conditions within the target areas/ affected communities during the past two years and concluded that a demonstrable impact has resulted from population growth, overgrazing, cropland expansion, and other human activities. Soil erosion for instance has been studied and estimated in Wadi Kufranja catchment (126.3 km²), Ajlun Governorate (Farhan et al. 2015) where it was concluded that about 42.1 per cent (5317 hectares) of the catchment area was predicted to have moderate risk of erosion, with soil loss between 5 and 25 ton per hectare per year. Risk of erosion is severe–extreme over 31.2 per cent (3,941 hectares) of the catchment, where calculated soil loss is 25–50 and >50 ton per hectare per year, the lower and the middle reaches of the watershed suffer from severe to extreme erosion risk.

The economic valuation of the direct and indirect impacts of the refugees on the ecosystems of host regions of Jordan requires an in-depth scientific research. This would lead to a clear policy document as needed to support decision making, in regard to the sustainability of ecosystems, the goods and services they provide, and their biodiversity, under crisis conditions such as the Syrian refugee case.



TARGET 15: ECOSYSTEM RESTORATION AND RESILIENCE

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

“Deforestation, wetland drainage and other types of habitat change and degradation lead to the emission of carbon dioxide, methane and other greenhouse gases. The reversal of these processes, through ecosystem restoration, represents an immense opportunity for both biodiversity restoration and carbon sequestration. In fact, in many countries, degraded landscapes, represent a huge wasted resource. Restored landscapes and seascapes can improve resilience including adaptive capacity of ecosystems and societies, and can contribute to climate change adaptation and generate additional benefits for people, in particular indigenous and local communities and the rural poor. The conservation, restoration and sustainable management of forests, soils (especially peatlands), freshwater and coastal wetlands and other ecosystems are proven, cost-effective, safe and immediately-available means to sequester carbon dioxide and prevent the loss of other greenhouse gases.” (CBD 2016e)

The CBD fifth national reports from West Asia contain limited information on this target, particularly in terms of restoring fifteen per cent of degraded ecosystems. In some countries, such as Jordan and Oman, strategies and action plans for restoring ecosystems and improving resilience are in place (CBD 2015a). For example in Oman, several programmes under the National Action to Combat Desertification and National Strategy for Climate Change are run to restore mangrove forests, rangelands, coral reef areas, sea grasses etc. (Ministry of Environment and Climate Affairs, Sultanate of Oman 2014). Efforts include transplanting mangroves and the placement of 50-300 million “setback lines” for development on beach areas, which in turn protect coastal biodiversity and act as a precautionary barrier for any expected rises in sea level.

In Iraq, UNEP-ROWA embarked on a project in 2014 to support the Government of Iraq in its efforts to nominate the Iraqi Marshlands as a World Heritage Site, through the development of a Consolidated Management Plan for the protection of The Ahwar of Southern Iraq, a refuge for biodiversity with important natural and cultural heritage sites (Harhash et al. 2014). The Huwaizah Marshes are an independent hydrological system and are the only marshes in Iraq which retain their water bodies throughout the year, generating high species diversity and abundance and creating a valuable habitat for birds and fish (Harhash et al. 2014) (Box 15.1). The limited interference from human activities, in addition to a robust management plan, will allow these natural wetlands to continue to deliver ecosystem services such as food, water, fibre and medicinal plants to local communities for generations to come.

A further example of progress towards this target is Jordan’s Biodiversity and Climate Change Adaption Strategy, which includes studying the effects of climate change on biodiversity in three protected areas and one special conservation area in the Jordan Rift Valley (Ministry of Environment, Jordan 2014). The study was used to propose adaptation models that incorporated three key concepts: resistance, resilience and transition. The goal was that the models could be replicated in other protected areas in the future, thus contributing to climate change mitigation.

In conclusion, while it is clear that some countries are taking actions related to this target, there is currently insufficient information to draw any conclusions on progress towards this target for the West Asia region. However it is likely that the situation is not dissimilar from the global picture presented in GBO-4, which indicates that for this target to be met by 2020, additional actions will be needed.

Box 15.1: The Ahwar of Southern Iraq and Relict Landscape of the Mesopotamian Cities - Case Study on the Management Planning of Natural and Cultural Resources in the Iraqi Marshlands.

(source: UNEP 2015)

The Iraqi Marshlands of Mesopotamia (al-ahwar), located around the confluence of the Tigris and Euphrates rivers in Southern Iraq, were once home to several hundred thousand inhabitants, the Ma'dan, a people whose unique way of life had been preserved for over 5,000 years. With a steady water flow, limited interference from human activities, dam construction, pollution and oil industry in addition to a robust management plan, these natural wetlands may continue to provide a sustainable environment to its inhabitants, supplying them with enough food, water, fibre and health materials for generations to come.

UNEP-ROWA embarked on a project 2014-2016 entitled, “World Heritage Inscription Process as a Tool to enhance the Cultural and Natural Resources Management of the Iraqi Marshlands”, to support the Government of Iraq to nominate the Iraqi Marshlands as a World Heritage Site at the United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Convention in Paris. The inscription process which is based on the “Outstanding Universal Values” (OUVs) of the Iraqi Marshlands (biodiversity and cultural values), is used as a vehicle to enhance the natural and cultural resources and strengthen institutional and technical capacity of local communities to manage the marshlands, conserve its biodiversity, sustain its ecosystem services for food, water and fibre, build resilience to climate change and protect its prehistoric relicts. A management planning exercise, integrating the cultural and natural components of the World Heritage file was undertaken in close consultation with marshland stakeholders, relevant local authorities and ministries: environment, tourism and antiquities, water resources, agriculture and oil and gas taking into consideration threats from extreme drought, climate change, mining, water dams and sand and dust storms. A consolidated Management Plan was finalized in June 2015 in collaboration with IUCN-ROWA, the Arab Regional Centre for World Heritage (ARCWH), UNESCO and the Ministry of Environment and Ministry of Tourism and Antiquities. The project also aims to mobilize global and regional support through mainstreaming and promoting international cooperation and build synergy with MEAs (CBD, Ramsar Convention, World Heritage Centre (WHC), United Nations Convention to Combat Desertification (UNCCD) and others) (UNEP 2015).

Iraq nominated “The Ahwar of Southern Iraq and Relict Landscape of the Mesopotamian Cities” a mixed serial property for inscription on the World Heritage list in January 2014 (Arab Regional Centre for World Heritage 2016).



Photos credit: Mudhafar Salim

Box 15.2: Kuwait Ecosystem Support and Conservation.

(source: Lina Al-Awadi 2014)

Action	Output	Relevant Aichi Biodiversity Target
Awareness activities	Awareness of biodiversity values	1
Integrate biodiversity disciplines in national education system	Incorporated in National planning	2
New protected areas	Increasing protected areas	11
Managed protected areas	Increase ecosystem resilience	15
Kuwait's National Biodiversity Strategy and Action Plan	NBSAP	17
Engagement of local communities	Engagement of local communities in preserving ecosystems	18

Kuwait has undertaken a number of projects to conserve the country's ecosystems and support environmental sustainability. A new national committee to follow-up on the CBD was formed, and a revised NBSAP was written. The country also expanded its protected areas from 2.1 per cent of total terrestrial land in 2005 to 22.3 per cent in 2012. Some protected areas were designated for scientific research such as the Kabad area, Sharq nature reserve and Sabah Al-Ahmed nature reserve - where the Kuwait Institute for Scientific Research has conducted a number of environmental studies.

Conservation efforts include protecting sea turtles through a project that ran from 2008 to 2011 in collaboration with the French company TOTAL. In addition, the Environment Public Authority worked on the reforestation of mangrove forests and breeding of quail birds. The Authority undertook a number of educational exhibitions to increase environmental awareness in schools, and public spaces and a substantial number of educational publications were also published and distributed.

Furthermore, Kuwait provided numerous scholarships to students studying disciplines that relate to biodiversity and environmental sustainability such as biology, organic chemistry and geology in the United States, engineering in sustainable and renewable energy in Canada, genetics and biotechnology in Ireland, and biology, genetics, microbiology, and environmental health in New Zealand. Such action will help build local capacities that could adequately respond to the challenges of biodiversity loss.

Box 15.3: Oman's National Plan for Mangrove Conservation and Management.

(source: Mohammed Al-Sinaidi 2014)

Oman's National Plan for Mangrove Conservation and Management		
Action	Output	Relevant Aichi Biodiversity Target
Conserving mangroves	Incorporated in National planning	2
Mangrove ecosystems management	Fisheries managed sustainably	6
Sustainable management of mangroves	Areas under forestry managed sustainably	7
Conserving mangroves	Increase ecosystem resilience	15
Mangroves are managed by local communities	Engagement of local communities in preserving ecosystems	18

Mangroves are a vital part of the Omani coastal ecosystem, and the expansion of urban areas has resulted in pressure on these habitats. The Omani Ministry of Environment and Climate Affairs has collaborated with the Japanese government to launch a national plan to conserve and re-plant mangroves. Oman began its mangrove conservation and management project in 2000. By 2014 about 571,000 mangrove trees had been planted over ten hectares of land. The project succeeded in engaging the local community, students and staff from the Ministry of Environment and Climate Affairs. The project aims to plant over a million mangrove trees by 2022 and includes a national plan which encompasses three phases; first, to distribute mangroves to four plantations in different provinces, second, to identify several locations to re-cultivate the mangroves, which will need seven to ten years to fully thrive, and third, to sustainably manage the mangrove forests. Local communities can use and manage the mangroves sustainably to acquire economic benefits by designating some areas for apiaries, recreational use, and fisheries.



*Planting mangroves in Oman
(Photo Credit: Bader Al-Bulushi)*

Box 15.4: Abu Dhabi's Blue Carbon Demonstration Project Holds Great Prospects.

(source: Jane C. Glavan 2014)

Action	Output	Relevant Aichi Biodiversity Target
Production of knowledge	Awareness of biodiversity values	1
Blue Carbon Demonstration Project	Recommendations for policy instruments	2
Conserving marine ecosystems through informed decision making	Increase ecosystem resilience and contribution of biodiversity to carbon stocks	15
Improved knowledge	Sharing the project results and data collection	19

The Abu Dhabi Blue Carbon Demonstration Project (2012-2013) aimed to analyse coastal ecosystems and the ways in which these ecosystems contribute to the capture and storage (sequestration) of carbon and hamper its release into the atmosphere. It was the first study of this kind to be undertaken in an arid region. Blue Carbon ecosystems include mangroves, seagrass beds, and salt marshes, which have a natural ability to store carbon making them valuable ecosystems for mitigating climate change. When these marine systems are destroyed, carbon dioxide and other greenhouse gases are released into the air, contributing to climate change. Hence, the Blue Carbon Demonstration Project analysed these coastal ecosystems, and provided policy recommendations on the best ways to conserve and cultivate them.

The project encompassed four environmental assessments and one policy assessment. The "carbon baseline assessment" quantified the amounts of carbon in Blue Carbon ecosystems. The "geographic assessment" mapped Abu Dhabi's Blue Carbon ecosystems and provided a carbon analysis tool to support policy making. The "blue carbon and ecosystem services finance feasibility assessment" recommended the most feasible policy and market options for implementing blue carbon projects in Abu Dhabi, thus advancing the science-policy interface.

Locally, the project contributed to the enhancement of local capacity to measure and monitor carbon in coastal ecosystems, and to incorporate the data in policy making for sustainable preservation of these environments. While, at the international level this demonstration project made a significant contribution to carbon content data and research thus placing the region on the global map (Abu Dhabi Global Environmental Data Initiative (AGEDI) 2014).

Box 15.5: Oman uses Innovative Fog Harvesting Techniques to Combat Desertification and Protect Biodiversity in the Province of Dhofar.

(source: Mohammed Al-Sinaidi 2014)

Oman uses innovative fog harvesting techniques		
Action	Output	Relevant Aichi Biodiversity Target
Fog harvesting is part of Oman's national environmental plan	Incorporated in National planning	2
Fog harvesting	More freshwater resources for climate change adaptation	15
Conservation of biodiversity through fencing	Expand Protected Area	11

Oman's scarce water resources and arid climate has forced the country to find new ways to provide water, and combat desertification. In the province of Dhofar, the community has successfully utilized "fog harvesting" techniques to rehabilitate about 931,260 km² of decertified land and plant over 4,991 trees in 2013. The process of fog harvesting entails the use of a "fog fence" placed against the wind. The fence composes of parallel wires fixed on a vertical canvas. When the fog collides with the fence, water drips down into containers, which store the water until it is needed for irrigation. This technique is highly efficient and requires low operational costs. During autumn, the average collected water amounts to 35,000 gallons (Ministry of Enviroment and Climate Affairs, Sultanate of Oman 2014). Thus far, five areas have been fenced and designated for the project. As a result, vegetation has thrived and proliferated because of the new water source, and also because overgrazing and vehicle use in the area has been banned.





TARGET 16: ACCESS TO AND SHARING BENEFITS FROM GENETIC RESOURCES

By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation.

“The fair and equitable sharing of the benefits arising out of the utilization of genetic resources is one of the three objectives of the Convention on Biological Diversity. The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity was adopted by the Conference of the Parties to the Convention on Biological Diversity at its tenth meeting in Nagoya, Japan.” (CBD 2016e)

The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity is a supplementary agreement to the CBD. It was adopted in 2010 in Nagoya Japan and entered into force on the twelfth of October 2014 (CBD 2016a).

Its objective is the fair and equitable sharing of benefits arising from the utilization of genetic resources, thereby contributing to the conservation and sustainable use of biodiversity. It provides a transparent legal framework for the effective implementation of one of the three objectives of the CBD: the fair and equitable sharing of benefits arising out of the utilization of genetic resources.

Within the West Asia region, as shown in Table 16.1, three countries have either ratified, acceded or approved the Protocol while two have signed it. Others have not completed these steps.

There is little information on what actions countries are taking to make the Protocol operational. This reflects a general lack of available data on progress towards the achievement of this target in the West Asia region.

In conclusion, progress is being made to sign and make the Nagoya Protocol operational in all countries in the region. However, six countries are not yet at that stage and hence there is a way to go before the target is fully achieved in the region.

Table 16.1: Status of West Asian countries in achieving Target 16 (source: CBD 2016d).

	Ratified, acceded or approved	Signed, not ratified	Not ratified, acceded, approved or signed
	Jordan, Syrian Arab Republic, United Arab Emirates	Lebanon, Yemen	Bahrain, Iraq, Kuwait, Oman, Qatar, Saudi Arabia, State of Palestine
Total	3	2	6



TARGET 17: BIODIVERSITY STRATEGIES AND ACTION PLANS

By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.

“National biodiversity strategies and action plans (NBSAPs) are the key instrument for translating the Convention and decisions of the Conference of the Parties into national action. For this reason it will be essential that Parties have developed, adopted and commenced implementing as a policy instrument an updated NBSAP which is in line with the goals and targets set out in the *Strategic Plan for Biodiversity 2011-2020* by 2015.” (CBD 2016e)

NBSAPs are the principal instruments for implementing the CBD at the national level. Preparing NBSAPs is a requirement by Article 6 of the Convention to ensure that Parties integrate biodiversity values into national biodiversity strategies.

Globally, GBO-4 indicates that countries are on track to submitting NBSAPs to the SCBD by the end of 2015, but that progress toward adopting NBSAPs as a policy instrument and implementing them is insufficient to meet the target by 2020 (SCBD 2014). In West Asia, the NBSAP revision process and Aichi Biodiversity Target framework was the centre of the biodiversity agenda and occupied the programmes of the regional governments. For example, UAE engaged in a country driven process across its seven emirates and adopted the Aichi Biodiversity Targets framework as a guide (CBD 2015a).

Iraq was one of the last countries to ratify the CBD (the 193rd party), but was one of the first countries to submit their fifth national report and to have developed their first NBSAP in an effective consultative process. In their fifth national report they have indicated that they will adopt the NBSAP as a policy instrument. However, information on how this will occur is lacking (Ministry of Environment, Republic of Iraq 2014).

Considerable efforts have been made to strengthen capacity within countries to create and revise NBSAPs. For example, with financial support from the Japan Biodiversity Fund, the SCBD, with numerous partners, has held a series of workshops on NBSAP development (CBD 2016c). Of twelve Parties in West Asia, two have submitted to the CBD a post-2010 NBSAP which takes the *Strategic Plan for Biodiversity 2011-2020* into account. Four Parties have a post-2010 NBSAP under development, with one of these four developing its first NBSAP (Table 17.1). For the remaining countries in the West Asia region, there is little information available on progress toward this target.

In conclusion, although there is progress towards the target in the West Asia region, there is still a considerable amount of effort required to ensure that all countries have a post 2010 NBSAP in place by 2020.



Table 17.1: Status of West Asian Countries' NBSAP Development (as of February 2016) (source: CBD 2016d).

Parties	Parties with a completed pre-2010 NBSAP	Parties with a post-2010 NBSAP under development	Parties that have submitted a post-2010 NBSAP to the CBD
1. Bahrain	X	X	
2. Iraq		X*	
3. Jordan	X		X
4. Kuwait	X		
5. Lebanon	X	X	
6. Oman	X		
7. Palestine, State of	There is no information about the status of an NBSAP for the State of Palestine, which became a Party on 02/04/2015		
8. Qatar	X		
9. Saudi Arabia	X		
10. Syrian Arab Republic	X		
11. United Arab Emirates (UAE)			X
12. Yemen	X	X	
Total	9	4	2

Note: X* show Parties with first NBSAP under development.

Table 17.2: Planned actions in West Asia and their relevance to the Aichi Targets.

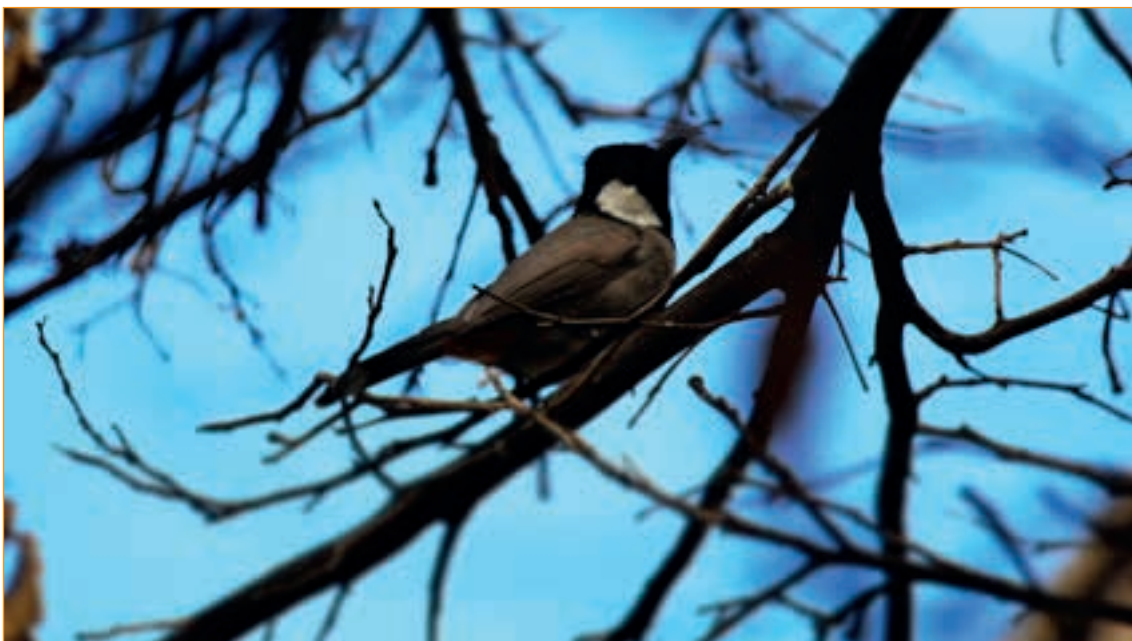
Action	Output	Relevant Aichi Target
Iraq's National Environmental Strategy and Action Plan (NESAP)	Awareness of biodiversity values	1
Nine out of the 20 Aichi targets have been chosen as national goals	Incorporated in National planning	2
Development of invasive species lists and fill gaps	Invasive species identified	9
Sustainable fishery in the Dalmaj Marsh of <i>Barbus sharpeyi</i>	Sustainable management of aquatic living resources	6
New Protected Area	Increasing protected areas	11
Preservation of date palms	Agricultural biodiversity	13
New Protected Areas	Increase ecosystem resilience	15
Iraq's National Biodiversity Strategy and Action Plan (NBSAP)	NBSAPs	17
Engagement of local communities in forming the NBSAP	Engagement of local communities in preserving ecosystems	18

Box 17.1: Achieving Progress on Aichi Biodiversity Targets in Iraq.

In 2009, Iraq signed the Convention on Biological Diversity (CBD) as the 193rd Party to the CBD. One of the main achievements was its rapid convergence with other countries in terms of compliance with CBD and other MEA commitments. Iraq was one of the first countries that released its fifth national report to CBD in March 2014 (Ministry of Environment, Republic of Iraq 2014) ranking it one of the leading countries to meet the CBD COP-10 decision X/2; setting its national biodiversity targets and submitting a report that diligently observed CBD and GEF guidelines.

Another lesson learned from Iraq is the mapping exercise undertaken in its transparent consultative process on Aichi Biodiversity Targets at the sub-national level. Based on available resources, Iraq focused on nine out of the twenty Aichi Biodiversity Targets to become national priority biodiversity targets, and steps have already been undertaken towards achieving them. The nine goals were translated into 23 SMART (specific, measurable, achievable, relevant, and time-bound) national biodiversity targets, and further developed into biodiversity indicators using modules and facilitated by UNEP-WCMC in Cambridge, UK.

These national targets include Target 1, raising awareness of biodiversity values, which was incorporated in Iraq's NBSAP. For Target 2, integration of biodiversity values would be achieved through Iraq's National Environmental Strategy and Action Plan (NESAP; Ministry of Environment, Republic of Iraq 2013). Target 6 includes sustainable fisheries, and in the Dalmaj marsh area there is a successful example of sustainable fishery production where the local species 'Bunni' (*Barbus sharpeyi*) is bred by a private owner and then released in the marshlands. For Target 9, on the eradication of invasive alien species, a research team has been formed to fill knowledge gaps, and formulate a national list of all invasive species in Iraq. Through Target 11 on protected Areas Iraq has successfully issued national legislation for protected areas in 2014. The Mesopotamia Marshland National Park was also declared as the first protected area in 2013. Target 13 focused on agricultural biodiversity in the marshland areas where water buffalos have been introduced and preserved, and date palms have been cultivated along the Shatt Al Arab River. For Target 17, NBSAPs, Iraq is in the process of adopting a participatory approach in developing an institutional framework to form the national biodiversity plan. Target 18 on traditional knowledge is addressed by a comprehensive review of Iraq's diverse ethnic, religious and local communities and their relation with biodiversity will be engaged and some meetings have been convened with groups in Dalmaj and Brazan. In Target 19 on biodiversity knowledge, various tools such as online data bases and international platforms have become known and used. Target 20 includes resource mobilization, which will be drafted as part of the NBSAP process (Ministry of Environment, Republic of Iraq 2014).



Box 17.2: Mainstreaming Gender into NBSAPs.

The CBD, in its preamble (paragraph 13) recognizes the vital role that women play in the conservation and sustainable use of biological diversity and affirms the need for the full participation of women at all levels of policy-making and implementation for biodiversity conservation. Aichi Biodiversity Target 14 says: "By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable". Building on guidance provided in its earlier decisions (IX/24, X/9 and XI/19), the twelfth Conference of the Parties of the CBD (COP-12), in its decision XII/7, recognized the importance of gender to the achievement of the Aichi Biodiversity Targets and encouraged parties to give gender due consideration in their NBSAPs and to integrate gender into the development of national indicators. To this end, the 2015-2020 Gender Plan of Action for the CBD, annexed to decision XII/7, suggested that parties could:

- Request that gender experts review the draft NBSAPs in order to assess gender sensitivity and provide guidance on improvements.
- Ensure that stocktaking exercises associated with NBSAPs development adequately accounts for the differences in uses of biodiversity between women and men.
- Ensure that women are effectively engaged as members of all stakeholder groups consulted during NBSAPs development.
- Consider including gender-disaggregated data collection and/or gender-specific indicators in the development of national biodiversity targets, building on relevant work undertaken by the Parties and relevant organizations on gender monitoring, evaluation and indicators, including the IUCN Environment and Gender Index.
- Consider how national gender policies can be incorporated into NBSAPs and can contribute to their effective implementation.
- Identify indigenous and local community experts on diversity and gender mainstreaming to support the integration of gender considerations into NBSAPs.
- Identify the importance of traditional knowledge and customary practice held by men and women in the protection of biodiversity and make use of them in supporting the implementation of NBSAPs (CBD 2014a).



*Zagros Mountains Ecoregion
(Photo credit: Mudhafar Salim 2014)*



*An Iraqi man carrying a "bunni" fish in the Southern marshes
(Photo credit: Mudhafar Salim 2014)*



TARGET 18: TRADITIONAL KNOWLEDGE

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.

“There is a close and traditional dependence of many indigenous and local communities on biological resources. Traditional knowledge can contribute to both the conservation and the sustainable use of biological diversity. This target aims to ensure that traditional knowledge is respected and reflected in the implementation of the Convention, subject to national legislation and relevant international obligations, with the effective participation of indigenous and local communities.” (CBD 2016e)

The continuing loss of traditional knowledge hinders global progress toward this target. Of particular concern is the loss of linguistic diversity and displacement of indigenous and local communities (SCBD 2014). The fifth national reports to the CBD show that most countries in West Asia respect and implement traditional agriculture due to the sustainability of these practices, and some have gathered and reported on these for the benefit of future generations (CBD 2015a). Overall, some progress is being made, albeit insufficient to meet the target by 2020, thus matching global trends.

Traditional knowledge in West Asia is unique to the region. For example the nomadic conservation practices of the “Hima” principles which is being reintroduced as a means for sustainable conservation of natural resources (IUCN 2010). Other remaining indigenous communities are the Ma’dan people of the Iraqi Marshlands that date to the prehistoric

Mesopotamian civilization. These Marshlands were once one of the largest wetlands in the region fed by the Tigris and Euphrates rivers before drainage and dam construction. Traditional knowledge has been developed over centuries on the sustainable use of ecosystem services provided by wetlands and reed beds for food and fibre (Garstecki and Amr 2011). This knowledge needs to be documented for future use and preservation.

In conclusion, the region is extremely rich in indigenous knowledge and contains practices that go back to the times of key developments in human civilization and culture, such as settled agriculture. The region also contains groups of people who are fully adapted to living in the harsh desert environments who have exceptional knowledge on how to survive. Some of this knowledge is eroding, but in many parts of the region traditional lifestyles still survive.

Box 18.1: Documentation of Traditional Medicine in Jordan.

In 2010, the Community-Based Rangeland Rehabilitation Project of Jordan conducted an ethnobotanical study that aimed to document knowledge on the traditional use of medicinal plants in the Badia region (Ministry of Environment, Jordan 2014). It identified key plant species and an informant consensus factor for each health disorder, fidelity level and use value for each plant species. Using questionnaires and video recordings, 80 participants (21 per cent of which were women), indicated that 47 plant species, including *Artemisia judaica*, *Citrullus colocynthis*, *Ecballium elaterium* and *Rheum palaestinum*, have traditionally been used for medicinal purposes by local Bedouins. The Ministry suggests that further research is carried out on the pharmaceutical value and production practices of the identified species, particularly those that are drought tolerant.



TARGET 19: SHARING INFORMATION AND KNOWLEDGE

By 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.

“All countries need information to identify threats to biodiversity and determine priorities for conservation and sustainable use. While nearly all Parties report that they are taking actions related to monitoring and research, most also indicate that the absence or difficulty in accessing relevant information is an obstacle to the implementation of the goals of the Convention.” (CBD 2016e)

In West Asia, the information in the fifth national reports indicates that most countries, for example Iraq and Oman have research institutions, ministries, private companies, non-governmental organizations (NGOs), and cooperative projects which are promoting biodiversity research (CBD 2015a).

The availability of West Asia species records in open access biodiversity data initiatives such as the Global Biodiversity Information Facility (GBIF) can be used as an indication of progress towards the wider sharing of West Asia’s biodiversity information as part of Target 19 (Figure 19.1). The availability of records shows that there is considerable progress in making biodiversity data available from the region. For example, the amount of available data has tripled between 2012 and 2014.

In addition to the work on species occurrence records through GBIF, UNEP’s regional data partner, the Abu Dhabi Global Environmental Data Initiative (AGEDDI), has commissioned a project with GBIF to unlock biodiversity data from Environmental Impact Assessments (EIAs) for policy making (GBIF Secretariat 2015). The project included a workshop in Oman (September 2015) to bring together the region’s government regulators and environmental consultants to discuss the best methods and benefits of sharing species data collected through EIAs, so as to improve informed decision-making. The project targeted national authorities and EIA practitioners as well as the Gulf Cooperation Council (GCC) countries, and resulted in the development of a Statement of Principles to establish best practices and tools for data sharing, and identify opportunities and challenges (GBIF Secretariat 2015).

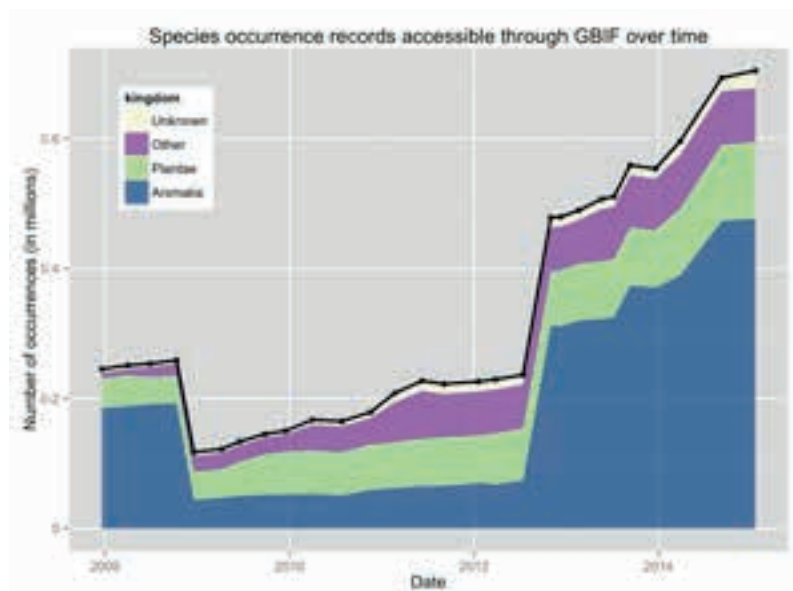


Figure 19.1: Growth in the number of species occurrence records from West Asia region accessible through Global Biodiversity Information Facility between 2008 and 2014 (source: GBIF 2015b).

Box 19.1: Abu Dhabi Publishes the Findings of its “Local, National, Regional Systematic Biodiversity Conservation Assessment” Project.

(source: AGEDI 2015)

Action	Output	Relevant Aichi Biodiversity Target
Production of knowledge	Awareness of biodiversity values	1
Biodiversity conservation assessment	Policy framework for conserving biodiversity	2
Sharing the assessment results	Improved knowledge	19

The Abu Dhabi Global Environmental Data Initiative has published the outcomes of its *Local, National and Regional Systematic Biodiversity Conservation Assessment* project. The assessment tool seeks to analyse terrestrial and marine ecosystems in the Arabian peninsula using three tools; first, an “ecosystem threat assessment”, which identifies the current level of threat faced by each habitat type, second, a “protection level assessment”, which indicates the current level of protection for each habitat type; and third, a “spatial prioritization”, which uses a decision-support tool that proposes a set of priority areas to designate as protected areas.

The findings indicate that some of the most critical areas in the Arabian Peninsula include shallow coastal habitats, which support coral reefs, sea grasses and globally important numbers of dugong and marine turtles. Terrestrial priorities include some key upland ecosystems, which support endemic species such as Arabian Leopard and Arabian Tahr. The Initiative developed the spatial analysis tool to provide decision makers and planners objective data to help them determine the best locations to meet conservation targets and take account of areas that should be avoided if at all possible because of conflicting land uses.

The project is unique because it is the first biodiversity conservation assessment of its kind that encompasses the Arabian Peninsula, and it provides an important framework for further investigation of priority focus areas (Figure 19.2).

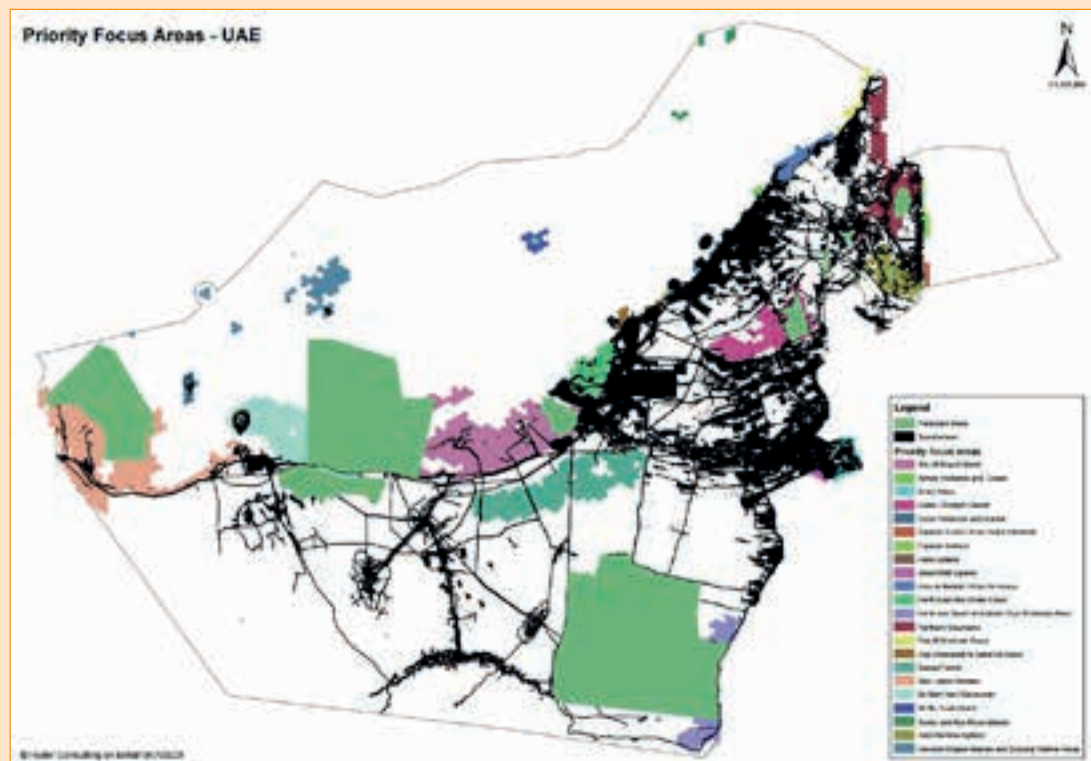


Figure 19.2: Priority Focus Areas – UAE (Photo credit: AGEDI).



So far, digital data from the West Asia region are not being shared through GBIF from any natural history institutions, research bodies, EIA surveys or other organizations. There is thus still great potential to increase the volume and range of species occurrence data from West Asia.



In conclusion, although the growth in biological records from this region is impressive, it is starting from a very low baseline compared with other regions. Almost half of the records (364,000) arise from a single citizen science observation network, the Bird Observation Dataset (GBIF 2015a).



TARGET 20: MOBILISING RESOURCES FROM ALL SOURCES

By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources, and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization should increase substantially from the current levels. This target will be subject to changes contingent to resource needs assessments to be developed and reported by Parties.

“Most countries indicated in their fourth national reports that limited capacity, both financial and human, was a major obstacle to the implementation of the Convention. The capacity which currently exists in countries needs to be safeguarded and increased from current levels, in line with the process laid out in the Strategy for Resource Mobilization, in order to enable countries to meet the challenges of implementing the *Strategic Plan for Biodiversity 2011-2020*. The fulfilment of this target will have implications on the feasibility of achieving the other nineteen targets contained in the *Strategic Plan*.” (CBD 2016e)

The fifth national reports from West Asia contain little information on progress towards Target 20 and therefore assessment of progress is challenging. Some countries indicate that there is no available funding or resources for biodiversity conservation, but that plans are in place to improve this trend. Other countries, such as Jordan, indicate increased allocation of funding and overall progress toward this target. In other countries, such as Saudi Arabia, the resources for conservation are considerable (CBD 2015a).

Information from AidData (Figure 20.1) shows that there are significant flows of resources from the donor community to the region. However, it has not been possible to compile similar data of the resources made available by governments, NGOs or the private sector in the region. This constrains what can be said about the progress towards this target.

In conclusion, information to assess progress towards this target is extremely limited. Data on the mobilization of financial resources will need to be generated in order to properly assess whether the West Asia region is on track to meet Target 20.

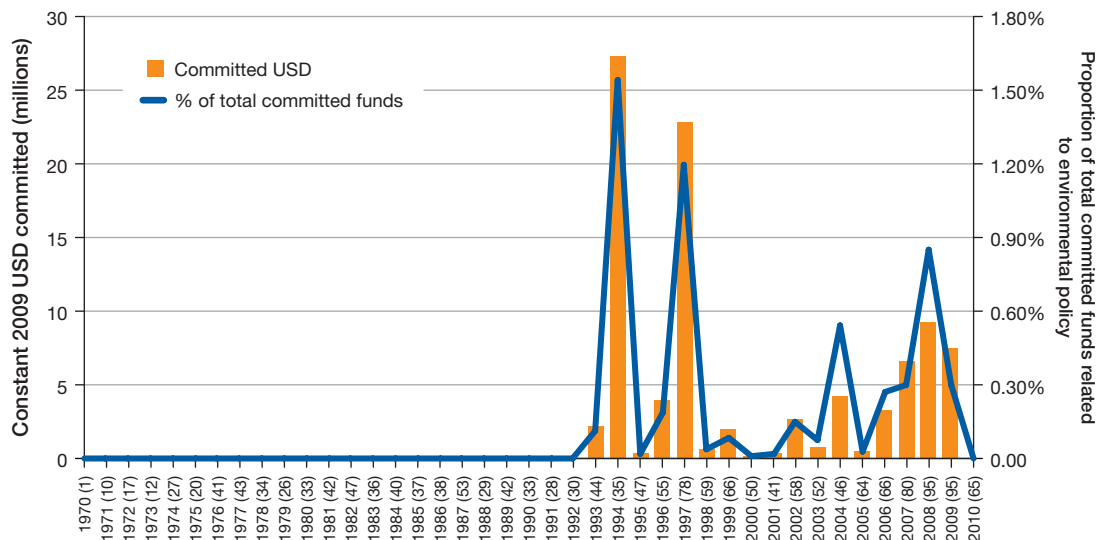


Figure 20.1: Investment in six activities related to the Aichi Biodiversity Targets by donors on AidData between 1970 and 2010 (Tierney et al. 2011).



6. OPPORTUNITIES AND RECOMMENDATIONS FOR THE FUTURE

Enhance data availability

A recurring constraint in West Asia is the lack of information and data; scientific uncertainty on biodiversity trends and conservation status remains a critical barrier to accurately assess the status and trends, risks, threats, and conservation needs for biodiversity in the region. Information systems to help track and assess the state of biodiversity and ecosystems will help to strengthen a culture of regular and rigorous environmental reporting by supporting monitoring of the status of threatened species, development of appropriate and harmonized biodiversity indicators to assess NBSAP progress, the creation of national ecosystem assessments and the growing demand to develop ecosystem accounting as part of developing green economies.

Complete national and regional ecosystem assessments

National and regional ecosystem assessments have immense value in synthesizing existing data, even when this is limited. The assessments help to present existing data to governments in ways that help decision-makers address key questions about the state of biodiversity and ecosystems, and allow them to explore policy options available to improve protection and management.

There is also a growing global body of knowledge which can be accessed and shared through a variety of sources including communities of practice such as the Sub-Global Assessment Network, the Biodiversity Indicators Partnership and the NBSAP Forum which undertake knowledge transfer and learning through websites, on-line learning tools and capacity building workshops.

Invest in raising public awareness

Anecdotal evidence suggests that public participation in biodiversity conservation is currently low and better environmental information to improve public engagement will be required. Awareness can be raised by a number of actions, through education and workshops; mainstreaming of biodiversity into government policies; incentives; campaigns by civil society and non-governmental organizations; partnership with private sector; through enhancing the training in colleges and universities; through developing national ecosystem accounting as part of mainstreaming biodiversity and ecosystem services across government.

Given that the anecdotal evidence suggests that public environmental awareness is low, investment in education and communications to build awareness of biodiversity ecosystems and their value to society is an important area of focus.

Pursue integrated resource management

Many of the case studies have demonstrated that one action, initiative or project can generate a number of beneficial outcomes for biodiversity and ecosystem services, delivering on multiple Aichi Biodiversity Targets simultaneously. For example, conserving a mangrove forest can increase ecosystem resilience, help coastal communities adapt to climate change, fight desertification and protect fisheries, and in turn local communities can sustainably manage and use the mangrove forests for recreational and economic benefits. Mangrove forests also sequester carbon which helps reverse the effects of climate change. Future plans need to consider how to integrate management options to achieve multiple objectives.

Further enhance regional cooperation

Countries in West Asia share many environmental challenges and continued political commitment to regional co-operation and strengthened regional governance is vital to addressing marine and terrestrial issues alike.



Mainstream biodiversity across government sectors

Considering biodiversity in daily decision-making in West Asia countries also requires mainstreaming. This entails placing biodiversity goals into sectoral decision-making including in all government agencies, including those not directly related to biodiversity issues, such as the Ministries of finance, agriculture, infrastructure, tourism and education.

Strengthen protected areas networks

There are many individual small-scale success stories in the establishment and improved management of protected areas as demonstrated in this report. Building on these, more coherent protected area networks need to be created especially within the marine and coastal environments where pressures are many and complex.

Enhance the implementation of biodiversity-related Conventions to build institutional capacity

Strenuous efforts have already been made to strengthen implementation of MEAs through numerous capacity building activities and the provision of technical support. Such activity needs to continue into the future, supported by the six international conventions focusing on biodiversity issues, namely the CBD, CITES, CMS, The International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA), Convention on Wetlands (Ramsar Convention) and World Heritage Convention (WHC).

Increase available resources for biodiversity

Overall, within the region, there is a need to support actions for mitigation of degraded ecosystems, capacity development programmes, technology transfer, assessment of ecosystems services for decision support systems and building new partnerships. There is considerable potential to mobilize resources from private business, national governments and global funds from within the region.

7. CONCLUSION

In the face of a uniquely challenging suite of environmental, social, political and economic pressures, the West Asia region has made considerable effort to address the ambitious goals of the *Strategic Plan for Biodiversity 2011-2020* and its Aichi Biodiversity Targets. The strong focus on building capacity and putting in place policy and institutional frameworks to support biodiversity conservation over the past five years will support future implementation of biodiversity related MEAs and NBSAPs. Although a regional deficit of biodiversity and ecosystem services information and

long term monitoring data has made it difficult to undertake a comprehensive assessment of progress towards the Aichi Biodiversity Targets, many individual success stories have emerged. Further efforts to share and communicate good practice, and to mainstream the importance of biodiversity and ecosystem services across government and society are needed so that the benefits of biodiversity and ecosystem services are clearly seen to contribute to the underpinning of sustainable development and human well-being throughout the region.



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United Nations Environment Programme
P.O. Box 30552 - 00100 Nairobi, Kenya
Tel: +254 20 762 1234
Fax: +254 20 762 3927
e-mail: publications@unep.org
www.unep.org



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