

1 Background on Mott MacDonald

Mott MacDonald is a US \$2 billion business spanning 150 countries, with over 16,000 staff in 180 principal offices working in all sectors from transport, energy, buildings, water and the environment to health and education, industry and communications, in the developed and developing world. Our breadth of skills, sectors, services and global reach makes us one of the world's top players in delivering management, engineering, development and environmental solutions for public and private sector customers. Underlying our entire business is our freedom as an employee-owned company to drive our own future, giving us the flexibility, inspiration and strength to do what is in the best interests of our customers, our partners and our staff – growing our future together. As a multi-sector professional services provider, our planning, advisory, technical and management activities encompass the environmental, social and institutional dimensions of development.

We support our clients to ensure that they address environmental and climate change risks across all sectors – from agriculture to infrastructure to economic growth. We help to develop and implement innovative approaches to natural resource planning and environmental protection.

2 Mott MacDonald's capacity and resources relevant to biodiversity and ecosystems

Mott MacDonald offers a diverse range of ecology and biodiversity skills and services. Our team has excellent knowledge and sound practical experience in balancing ecology and development needs to deliver a variety of projects. Our services provide support from early stage concept design right through to post-project monitoring and evaluation and are offered as part of a fully integrated multi-disciplinary environmental team.

Our professional ecology team looks to identify key ecological constraints during the early stages of any project or plan to both public and private sector clients over a wide range of development scenarios. From this we advise the correct level of assessment required to reduce both project risk and extensive mitigation measures.

Our highly qualified specialist team has a diversity of capabilities and skills, delivering best practice to complex environmental and engineering projects. Our range of work varies from ecology support on housing developments to hydropower projects or large-scale peat restoration projects. We are equally adept at tackling projects of any size and nature, ensuring that all of our clients comply with all aspects of relevant legislative requirements and where applicable international standards.

Ecological masterplanning, habitat enhancement, creation and restoration are an integral part of our services. We provide our clients with a full package of mitigation and compensation advice, from developing mitigation strategies, construction and environmental management plans, ecological risk management, bespoke toolbox and training services to providing full Ecological Clerk of Works services. We have extensive experience in preparing project-specific biodiversity action plans, management and monitoring plans, as well as specialist studies such as critical habitat assessments or wetland vulnerability assessments.

We have strong links to our innovation teams and work on solutions to common problems to make efficiencies in our everyday lives. Examples include health and safety alerts whilst on site through to using machine learning to identify invasive species along linear features which has resulted in huge cost savings. We like to work with our clients to solve common problems with the most up to date technology and processes to make our everyday working lives easier.

3 Integrating concern for biodiversity and ecosystems in Mott MacDonald projects

3.1 International development programmes

Concerns for biodiversity and ecosystems are integral to most of our projects, though due to priorities of our clients they seldom take centre stage and often seem of peripheral concern. Mott MacDonald ensures that biodiversity and ecosystems are fully integrated from project design and inception, and that effort is

undertaken to convince the client that this is in everyone's interest and promotes general welfare and well-being.

Beyond EIAs. Addressing biodiversity and ecosystem concerns can involve expanding impact avoidance, reduction and mitigation measures on development projects to achieve more than reducing biodiversity loss. The Flood and Riverbank Erosion Risk Management Investment Program in Bangladesh, for example, involves a feasibility study (FS) and design to reduce vulnerability against floods and riverbank erosion. Mitigation measures proposed include the installation of fish passes to restore connectivity with the floodplain and replanting of reinforced embankments. In the recently completed FS, however, we proposed to reduce fishing pressures by placing buoys (which prevent use of trawl nets but do not affect small-scale fishers) and enhance biodiversity by creating a new network of 1012 fish and wildlife reserves along the river corridor.

Regional planning programs offer opportunities for ensuring that biodiversity and ecosystem concerns are integrated before widespread development has taken hold. The recently (July 2020) started Development of the Merauke irrigation system in Papua, Phase-I project in eastern Indonesia, for example, includes preparing a Master Plan (MP) that builds upon earlier Mott MacDonald projects (e.g. EMRP, WACLIMAD) whereby this concept was first developed. The MP approach to regional planning takes into account land suitability factors such as soil, water, topography, tides, status (forestry, concession titles), but also biodiversity (protected areas, watershed protection forest, HCVMs, etc.), occurrence of peat, and social factors such as customary law (tanah adat). Hence, the FS will include a detailed Plan for conservation of peat, forest, biodiversity, and heritage sites and contribute to prevent loss. On the Somaliland Development Fund Phase-2 (SDF-2, 2018-2022), the client focus is largely on screening and mitigating for environmental and social impacts and climate proofing of proposed interventions. However, opportunities for expanding this to address biodiversity and ecosystem concerns include addressing invasive exotic plants and enhancing protected areas are proposed.

Carbon projects may suffer from a narrow environmental focus, and on peatland management and restoration projects in Indonesia, for example, the client's primary aim is to curb carbon emissions and prevent fires in degraded peatland because of health and climate change concerns. However, these ecosystems are also of significance for unique biodiversity and perform many ecosystem services in addition to carbon storage (e.g. water storage, local commodities). On the Berbak Green Prosperity Programme (2016-2018), for example, this has led to including replanting with indigenous tree species important for wildlife and for locally important non-timber forest products to peat rewetting (i.e. canal blocking) programmes.

In the Netherlands-funded IWRM Programme 'Water for Growth Rwanda' (2015-2019), Mott MacDonald led the development of a GIS-based Catchment Restoration Opportunities Mapping decision support system (CROM DSS). Initially focused at catchment restoration prioritisation to mitigate soil erosion risks, we next used CROM DSS to quantify and value avoided soil erosion in a proposed scheme for Payment for Ecosystem Services (PES).

3.2 Private and private-public infrastructure projects funded by international finance institutions

We apply international biodiversity, national and lender standards to ensure biodiversity, ecosystems and ecosystem services are protected and enhanced on the projects we are involved in. While preparing impact assessments, biodiversity management/action plans or undertaking due diligence, we ensure the mitigation hierarchy (avoid, minimise, restore and offset) is applied systematically and aimed to achieve biodiversity no net loss or net gain where required or appropriate. We use the technical skills of our specialists together with negotiation/influencing skills and stakeholder engagement to achieve the best outcomes for biodiversity, ecosystems and ecosystem services.

For example, Mott MacDonald provided biodiversity services on four out of eight hydropower projects that have been found to demonstrate international good practice with regard to biodiversity mitigation (internal study by the International Finance Corporation, 2020). This demonstrates both the high technical skills of our specialists and that our company takes biodiversity seriously.

On many occasions, we have delivered biodiversity training to developers, financial institutions, government agencies, local consultants etc. Our training to a global renewable energy company included good international practices for biodiversity baseline collection and impact assessment, the mitigation hierarchy with examples from different sectors, how to develop biodiversity action/management/monitoring plans etc.

3.3 UK projects

Our UK wide-based Ecology Team is part of a large regional multi-disciplinary Environment Team with over 300+ environmental specialists nationally who develop practical biodiversity solutions for construction projects and work collaboratively with our clients and internal design teams. This combined experience means we have a wide range of relevant protected species specialists and extensive site knowledge as well as practical experience in problem solution regarding challenging ecological species or mitigation.

We are able to provide ecological support relating to all protected species surveys and European Protected Species licence applications, including specialist ornithologist, mammal, reptile, freshwater, marine, botanical and habitat management support. Our ecologists have strong links with our engineering, design and construction teams which fosters a common-sense approach to biodiversity matters and how they relate to programme, constructability and finance.

Nationally Significant Rail Project. Commitment to deliver a railway that respects the natural environment by conserving, replacing or enhancing wildlife habitats with a new 'green corridor' along the route. We are responsible for assessing baseline information as well as designing monitoring and mitigation measures. We are currently undertaking a full suite of habitat and species surveys for the project which support the Environmental Statement for the project. Since 2017, we have managed the completion of 8,700 ecology survey visits, spanning 31 different survey types. This involves a team of over 300 ecologists. Our 'One Team' approach is strongly collaborative, enables open communication and access to information, and utilises the wealth of ecological expertise from across the companies. This approach has been extremely successful and has benefited the project directly with enhanced efficiency in both delivery and technical quality, as well as having a strong emphasis on health and safety controls by, for example, sharing information on site hazards.

Airport Expansion Project. This was arguably the largest assessment in the UK, with a study area of over 8,500 hectares. We have undertaken a vast amount of species surveys for this scheme for both

terrestrial and aquatic species. We have also developed a bespoke Biodiversity Net Gain Strategy and methodology, amidst changing guidance that will continue to develop with the Environment Bill, both were approved by Natural England.

Nuclear Power Station Project. We were appointed for over five years to undertake the management of the biodiversity on this development. We undertook targeted species and habitat surveys whilst also undertaking the monitoring surveys throughout the different phases of construction in accordance with the DCO. We are currently working with Balfour Beatty to undertake the biodiversity calculation using the new metric and will undertake the Natural Capital Account for the whole project.

4 Suggestions for consideration by the EAC

Mott MacDonald is strongly committed to the SDGs, including those relating to climate change and biodiversity. In International Development however, ramifications of the structural disconnect between individual project terms of reference (ToR) on the one hand, and the integrated systems thinking approach that is required to address cross-cutting themes like biodiversity and climate change on the other, are becoming increasingly apparent. ToRs are usually developed in silos, within the context of individual beneficiary ministries and catering to KPIs of donor organisations that are equally siloed, with very limited horizontal collaboration between different departments. Projects focusing specifically on biodiversity are few, and their impact can only be limited if stakeholders across (beneficiary) government, civil society, and private sector are not involved properly. Truly integrated projects, e.g. addressing the water-energy-food-ecosystems securities nexus, are virtually absent in the international development arena, but crucial to address complex issues related to long term national security of water, energy, food, and health in the face of climate change, population growth, and economic development. Demands for water, energy, and land need to be met by limited natural resources and balanced with similar demands by the ecosystems and biodiversity that ultimately provide the ecosystem services to society, to achieve those national securities sustainably.

Mott MacDonald implemented the first-ever national scale water-energy-food securities nexus project in 2014, for a country in the Middle-East / North Africa region. Results included insight in the devastating long-term effects of current policies, which seemed beneficial at first glance, but unsustainable when viewed through an integrated nexus lens. In the years after, not a single similar project was brought to the market by the donor community. We have the tools available and have significantly enhanced our digital capabilities to carry out much-needed nexus studies – incorporating climate change, biodiversity and ecosystem services – throughout the Global South as well as the Global North. We would very much welcome funding opportunities that invite private sector innovation and systems thinking, to open opportunities for sustainable development with the connected thinking that we offer.

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