Table : Wetland ecosystem services, values and valuation techniques

|  | **Types of values** | | | **Typical valuation techniques** | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Ecosystem service** | **Direct Use** | **Indirect use** | **Non use** | **TC** | **AB** | **AC** | **CB** | **HP** | **PF** | **RC** | **CV** | **CM** |
| ***Provisioning services*** |  |  |  |  |  |  |  |  |  |  |  |  |
| Food (e.g. fish, crustaceans, game, crops (e.g. rice), wild foods, spices etc.). | ✓ | ✓ |  |  |  | ✓ |  |  | ✓ | ✓ |  |  |
| Water (both for consumption and as inputs to other production such as irrigation). | ✓ | ✓ |  |  |  | ✓ |  |  | ✓ | ✓ |  |  |
| Water storage (wetlands can be a substitute for dams). |  | ✓ |  |  |  | ✓ |  |  | ✓ | ✓ |  |  |
| Water transport. |  | ✓ |  |  |  | ✓ |  |  | ✓ | ✓ |  |  |
| Fibre, fuel and other raw materials used in economic production. | ✓ | ✓ |  |  |  | ✓ |  |  | ✓ | ✓ |  |  |
| Provision of other industrial inputs (e.g. pharmaceuticals). | ✓ | ✓ |  |  |  | ✓ |  |  | ✓ | ✓ | ✓ | ✓ |
| Genetic material (e.g. ornamental species) | ✓ |  | ✓ |  | ✓ |  |  | ✓ |  |  | ✓ | ✓ |
| Energy (e.g. input to hydropower, or biomass fuels) |  | ✓ |  |  |  | ✓ |  |  | ✓ | ✓ |  |  |
| ***Regulating services*** |  |  |  |  |  |  |  |  |  |  |  |  |
| Hydrological flow regulation and groundwater recharge/discharge (where water is used for consumptive uses). | ✓ | ✓ |  |  |  | ✓ |  |  | ✓ | ✓ |  |  |
| Carbon sequestration. |  | ✓ |  |  |  | ✓ |  |  | ✓ |  |  |  |
| Climate regulation (macro). |  | ✓ | ✓ |  |  |  |  | ✓ | ✓ |  |  |  |
| Local climate regulation and influence on precipitation. |  | ✓ | ✓ |  |  | ✓ |  |  | ✓ | ✓ |  |  |
| Water flow regulations and potential mitigation of flood risk. |  | ✓ |  |  |  | ✓ |  | ✓ |  | ✓ | ✓ | ✓ |
| Storm and storm surge protection. |  | ✓ |  |  |  | ✓ |  | ✓ |  | ✓ | ✓ | ✓ |
| Purification of water as part of a multi-barrier water treatment train. |  | ✓ | ✓ |  |  | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Prevention of saline intrusion. |  | ✓ |  |  |  | ✓ |  |  | ✓ | ✓ |  |  |
| Purification of air quality. |  | ✓ | ✓ |  |  | ✓ |  | ✓ | ✓ |  | ✓ | ✓ |
| Other waste decomposition and detoxification. |  | ✓ | ✓ |  | ✓ | ✓ |  |  | ✓ |  | ✓ | ✓ |
| Crop pollination through the provision of habitat for pollinators. |  | ✓ | ✓ |  |  | ✓ |  |  | ✓ | ✓ | ✓ | ✓ |
| Pest and disease control through the provision of filtering services and buffers etc. |  | ✓ | ✓ |  |  | ✓ |  |  | ✓ | ✓ | ✓ | ✓ |
| ***Supporting services*** |  |  |  |  |  |  |  |  |  |  |  |  |
| Biodiversity. |  | ✓ | ✓ | ✓ |  |  | ✓ |  |  |  | ✓ | ✓ |
| Nutrient dispersal and cycling. |  | ✓ | ✓ |  |  | ✓ |  |  | ✓ | ✓ |  |  |
| Soil formation. |  | ✓ | ✓ |  |  | ✓ |  |  | ✓ | ✓ |  |  |
| Seed dispersal. |  | ✓ | ✓ |  |  | ✓ |  |  | ✓ | ✓ |  |  |
| Habitat to support primary production. | ✓ | ✓ | ✓ |  |  | ✓ |  |  | ✓ | ✓ |  |  |
| ***Cultural services*** |  |  |  |  |  |  |  |  |  |  |  |  |
| Recreational opportunities. | ✓ | ✓ | ✓ | ✓ |  |  | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Provision of destinations for tourism. | ✓ | ✓ | ✓ | ✓ |  |  | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Aesthetic values translating into utility for visitors and changes in land values close to wetlands. |  |  | ✓ | ✓ |  |  |  | ✓ |  |  | ✓ | ✓ |
| Provision of cultural values. |  |  | ✓ |  |  |  |  | ✓ |  |  | ✓ | ✓ |
| Provision of historical values. |  |  | ✓ |  |  |  |  | ✓ |  |  | ✓ | ✓ |
| Source of intellectual and spiritual inspiration. |  |  | ✓ |  |  |  |  |  |  |  | ✓ | ✓ |
| Scientific discovery. |  |  | ✓ |  |  |  |  |  | ✓ | ✓ |  |  |

Legend: TC = travel cost, AB = averting behaviour, AC = avoided cost, CB = contingent behaviour, HP = hedonic pricing, PF = production function, RC = replacement cost, CV = contingent valuation, CM = choice modelling.

Source: MJA and MainStream analysis based on a review of literature.