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This is a compilation of existing research needs expressed in the decisions of the Conference of Parties of the Convention on Biological Diversity. The table contains direct as well as indirect research needs. The aim is to make research relevant COP decisions easier accessible for scientists and other interested persons

Research needs expressed in the Decisions of the Conference of the Parties to the Convention on Biological Diversity:

Thematic Work Programme on Marine and Coastal Biodiversity

The oceans occupy more than 70% of the earth's surface and 95% of the biosphere (http://www.cbd.int/marine/default.shtml). Life in the sea is roughly 1000 times older than the genus Homo. There is broad recognition that the seas face unprecedented human-induced threats from industries such as fishing and transportation, the effects of waste disposal, excess nutrients from agricultural runoff, and the introduction of exotic species.
The cited Decisions that express research needs are VI/8, VII/5 (where the work programme is annexed), VIII/21 and VIII/22, also checked was Decision VI/3.

Direct research needs				
Decision	**Paragraph**	**Chapeau / Heading**	**Text**	**Source** http://www.cbd.int/decisions/
VI/8	Annex I Part II Planned Activity 9	Marine and coastal biological diversity.	Two major elements of **taxonomic work within marine and coastal ecosystems can be considered as high priority** for achieving the Convention's objectives in marine and coastal systems, namely **ballast water organisms, and key organisms for monitoring the health of mangrove systems through their invertebrate fauna**. The ballast water organisms sub-element will require, *inter alia*, a **focus on pelagic juvenile stages of benthic organisms**. The second element focuses on mangroves, which are among the world's most rapidly changing systems. Within the marine and coastal biodiversity programme of work there is a need to **develop taxonomic support for baseline monitoring of invertebrate fauna in mangrove systems**.	cop-06.shtml?m=COP-06&id=7182
VII/5	Annex I Appendix 1 Para 1 a	Scientific work plan on coral bleaching.	**Identification of coral-reef areas that exhibit resistance and/or resilience to raised sea temperatures**. **Identification, development, testing and refinement of management regimes to enhance reef resilience to and recovery from raised sea temperatures and/or coral bleaching**, through the application of, *inter alia,* appropriate protective status, reduction of reef stressors, management of reef communities, etc. **Investigation of factors that enable such resistance** such as, *inter alia* cool currents, cold up-wellings, genetic tolerance in certain species and genotypes of corals to raised sea temperatures, presence and necessary abundance of reef associated biodiversity that imbues reef systems with resilience to raised sea temperatures and/or coral bleaching. **Investigation of the role(s) of sea currents**, local and larger scale, in the resistance and/or resilience of coral reefs to raised sea temperatures and/or coral bleaching.	cop-07.shtml?m=COP-07&id=7742
VII/5	Annex I Appendix 1 Para 1 c		**Explore utility and feasibility of short-term management interventions** to reduce severity of bleaching or to facilitate recovery after bleaching.	

VII/5	Annex I Appendix 1 Para 1 e		Assist reef managers to **identify**, implement and justify **actions that can reduce localized stressors** on reefs that will increase reef resilience to mass bleaching***.***	
VII/5	Annex I Appendix 1 Para 2 a	Scientific work plan on coral bleaching.	**Implement** and coordinate **targeted research** programmes, including predictive modelling, that increase understanding **of:** **The *mechanisms* that cause mass coral bleaching**, including: **Mechanisms that lead to variation in bleaching symptoms**; **Bleaching thresholds** for varying geographic locations and reef types for acute and chronic increases in sea temperature; **Synergistic relationships between global stressors**, such as warming, increased exposure to ultraviolet radiation and localized threats that already place reefs at risk, such as pollution and overfishing; **The *long-term consequences* of mass coral bleaching** under different warming scenarios, including: **Understanding of acclimation and adaptation potential** **Prediction of the frequency and extent** of mass bleaching; **Predict the impacts of mass bleaching** on ecological, social, and economic systems. The *management* of mass coral bleaching, including: **Effectiveness of short-term management interventions** in promoting reef resilience to bleaching and/or recovery after mass bleaching events. **Understanding of strategies to support long-term resilience** to bleaching, including connectivity, removal of localized stressors, etc. **Document instances of mass bleaching, and the impacts** of coral-bleaching and coral-mortality events on social and economic systems, and provide relevant information to the Secretariat through the Global Coral Reef Monitoring Network (GCRMN).	cop-07.shtml?m=COP-07&id=7742

VII/5	Annex I Appendix 1 Para 2 b	Scientific work plan on coral bleaching.	**Implement baseline assessments** and long-term monitoring **to measure the extent and severity of coral bleaching, mortality and recovery and identify reef areas that exhibit resistance and/or resilience to raised sea temperatures**; **Widen**, as necessary, **the research on socio-economic impacts** of coral bleaching on communities dependent on coral reefs; **Identify pilot projects** that establish training programmes and survey protocols **and enhance availability of expert advice** at a range of scales, including classification of scale data.	cop-07.shtml?m=COP-07&id=7742
VII/5	Annex I Appendix 1 Para 4 b		**Develop approaches for assessing the vulnerability of coral-reef species to global warming**.	
VII/5	Annex I Appendix 4 Priority 2.1	Research priorities including research and monitoring projects associated with PE 3: Marine and coastal protected areas.	**Undertake initiatives to map ecosystems and habitats** within regions and biogeographic areas, and determine the minimum level of broad habitat categories required for assessing representativeness of marine and coastal protected areas networks. Use this **as a basis for assessing representativeness of the existing marine and coastal protected areas network**. This work should use a high-level framework that is compatible with the basis for global inventory work. One possible approach to this work is to hold regional workshops. **Assess connectivity** to determine bioregions, and apply this information for evaluation of the existing marine and coastal protected areas network, as well as for identifying priority areas for the future. **Assess the effectiveness of the current marine and coastal protected areas network** regionally and globally for the conservation and sustainable use of migratory species.	cop-07.shtml?m=COP-07&id=7742

VII/5	Annex I Appendix 4 Priority 2.3		**Develop and test a suite of effective assessment measures**, including indicators, on a number of existing sites (biological, socio-economic and governance-based indicators). Selected pilot sites must cover the range of cold, temperate and tropical regions. **Develop methods for evaluating the effectiveness of entire networks** of marine and coastal protected areas. **Develop methods for adapting marine and coastal protected areas management** in response to possible changing species and habitat distribution patterns, which may result from climate change.	
VII/5	Annex I Appendix 4 Priority 3.1		**Evaluate the long-term benefits** (for example species changes, habitat changes and ecosystem changes) of protecting large-enough/significant-enough critical habitats and ecosystems, by developing case-studies.	
VII/5	Annex I Appendix 4 Priority 3.6		**Develop methods for estimating the percentage of non-extractive protection required**, in conjunction with national monitoring programmes, depending on the size and dynamics of local populations.	
VII/5	Annex I Appendix 5 Para a	Research priorities including research and monitoring projects associated with PE 4: Mariculture	**Development of research programmes to support establishment of efficient monitoring programmes to monitor impacts of mariculture on marine and coastal biological diversity**; **Development of criteria** for judging the seriousness of biodiversity effects of mariculture; Subsequent **establishment of monitoring programmes** to detect effects of mariculture biodiversity; **Research on the impact of escaped mariculture species on biodiversity**; **Development of criteria for when environmental impact assessments are required**, and for the application of environmental impact assessments at all levels of biodiversity (genes, species, ecosystems), in the context of the guidelines endorsed by the Conference of the Parties in decision VI/7 A and the recommendations endorsed in decision VI/10, annex II; Noting that the FAO glossary of terms is skewed towards marine capture fisheries, **expansion of this glossary with regard to its terminology related to aquaculture**; **Reinforcement of global assessments** of marine and coastal biological diversity.	cop-07.shtml?m=COP-07&id=7742

VII/5	Annex I Appendix 5 Para b	Research priorities including research and monitoring projects associated with PE 4: Mariculture	**Development of genetic resource management plans for broodstock**; **Research aimed at understanding genetic effects of biotechnology developments in aquaculture;** **Research aimed at understanding genetic structure of both the farmed and wild populations**, including: **Effects of genetic pollution** from farmed populations on wild populations; **Maintenance of genetic viability** of farmed populations; **Studies of (genetics of) wild populations** as potential new candidates for mariculture.	cop-07.shtml?m=COP-07&id=7742
VII/5	Annex I Appendix 5 Para c		Support for **basic global-scale taxonomic studies**, possibly in conjunction with the Global Taxonomy Initiative (GTI); Support for **studies aimed at development of responsible aquaculture** using native species, including through consideration of traditional knowledge; **Development of methods and techniques for limiting by-catch of seed collection**.	
VII/5	Annex I Appendix 5 Para d	Research priorities including research and monitoring projects associated with PE 4: Mariculture	**Research on carrying capacity and carrying capacity models** for planning aquaculture, especially stocking rates; Comprehensive **studies to quantitatively and qualitatively assess effects of mariculture on biodiversity** for various aquatic ecosystems, selected by their sensitiveness degree; **Research on the competitive nature imposed on marine fisheries by capture and culture fisheries**; **Studies aimed at improved understanding of the effects of inputs**, such as chemicals, hormones, antibiotics and feeds on biodiversity; **Research on the impact of diseases** in cultured and wild species on biodiversity;	cop-07.shtml?m=COP-07&id=7742
VII/5	Annex I Appendix 5 Para e	Research priorities including research and monitoring projects	Comparative **studies on legislation, economic and financial mechanisms for regulating mariculture activity**; **Development of** quantitative and qualitative **criteria to assess mariculture impacts** on the environment, including cultural and social impacts, as outlined in the recommendations contained in decision VI/10, annex II;	cop-07.shtml?m=COP-07&id=7742

VII/5	Annex I Appendix 5 Para f	associated with PE 4: Mariculture	Support for **mariculture-related disease monitoring programmes** at the global level; Support for **the transfer of biotechnological diagnostic tools** for wide use; **Update of taxonomic database** including genetic diversity at the intra-specific level.	
VII/5	Annex III Para 2	Improvement of available data for assessment of progress towards the global goal.	Global data on marine and coastal protected areas should be improved and/or gathered in the following critical categories: **Location** (physical coordinates and country or political unit, including the names of neighbouring country/countries where the marine and coastal protected areas is transboundary); **Total size** of the protected area, the relative size of the marine and coastal component and, where transboundary, the total area under country jurisdiction; **Temporal aspects** e.g. permanency or seasonality of protection or management; **Type of protection and management** proposed or being implemented, using a simple three-tier system; Representative highly-protected areas where extractive uses are excluded; Additional marine and coastal protected areas; Sustainable-management practice in the wider coastal and marine environment; **Effectiveness of protection and management** gauged against the regime being proposed or being implemented, using a simple three-tier system: Currently fully effective – no significant problems known; Currently partially effective – some deficiencies; Currently ineffective – significant implementation problems; **Nationally-designated names** for type of protection and management e.g. marine park, marine and coastal nature reserve, etc. **Habitats protected and managed** (3D not just benthic); **Species protected and managed** (3D not just benthic)**;** **Habitats and species specifically excluded from protection/management within the marine and coastal protected**	cop-07.shtml?m=COP-07&id=7742

			area (i.e. that have no legal protection); **Nature of threats to habitats/species** **Name and contact details** of person(s) providing the above information and date on which this was done.	
VIII/21	Para 2	The Conference of the Parties	*Recognizes* that **given the** vulnerability and **general lack of scientific knowledge of deep seabed biodiversity, there is an urgent need to enhance scientific research** and cooperation and to provide for the conservation and sustainable use of these genetic resources in the context of the precautionary approach;	COP-08&id=11035
Indirect research needs				
Decision	**Paragraph**	**Chapeau / Heading**	**Text**	**Source** http://www.cbd.int/decisions/
VII/5	Annex I Appendix 1 Para 1 c	Scientific work plan on coral bleaching.	**Instigate and support initiatives** for marine protected areas managers **where resilience principles are being actively applied and tested**.	
VII/5	Annex I Appendix 4 Priority 1.1	Research priorities including research and monitoring projects associated with PE 3: Marine and coastal protected areas.	**Draft** action-oriented **strategies for establishing marine and coastal protected areas networks**, and implement those strategies in line with regional initiatives, for example by holding regional workshops.	cop-07.shtml?m=COP-07&id=7742

VII/5	Annex I Appendix 4 Priority 2.2	Research priorities including research and monitoring projects associated with PE 3: Marine and coastal protected areas.	**Develop the high-level framework for the global inventory** (see annex IV below), and related advice to national managers on national inventories. **Develop national databases** for assessment of selected existing national/regional networks, selecting examples from the range of political, economic and biogeographic situations. **Undertake a global review of the current state of knowledge of marine and coastal protected areas** by region. Provide output in a format understandable for managers and policy makers. **Compiling information that illustrates the values, benefits and unique contributions of marine and coastal biodiversity**, *inter alia*, breeding, migration patterns of marine species, and spawning sites.	cop-07.shtml?m=COP-07&id=7742
VII/5	Annex I Appendix 4 Priority 3.2		**Provide a conceptual model** and best practice examples of criteria for selecting marine and coastal protected areas, by undertaking linked work in a small number of selected countries.	
VII/5	Annex I Appendix 4 Priority 3.3		**Development of** culturally sensitive marine and coastal protected areas development/management **approaches** to achieve effective participation, as appropriate, of indigenous and local communities and relevant stakeholders. **Develop adaptive approaches** to marine and coastal protected areas establishment and management. This could be done by collection and dissemination of case studies of both best and worst-case examples of the degree to which an understanding of how target communities operate (socially/culturally) and "do business" can affect the success of the establishment and management of marine and coastal protected areas.	
VIII/21	Para 1	The Conference of the Parties	*Notes* that **deep seabed ecosystems beyond the limits of national jurisdiction**, including hydrothermal vent, cold seep, seamount, coldwater coral and sponge reef ecosystems, **contain genetic resources of great interest** for their biodiversity value and **for scientific research** as well as for present and future sustainable development and commercial applications;	COP-08&id=11035

VIII/21	Para 7		*Requests* the Executive Secretary, in collaboration with the United Nations Division for Ocean Affairs and the Law of the Sea, and **other relevant international organizations, to further analyse and explore options for preventing and mitigating the impacts of some activities to selected seabed habitats and report the findings to future meetings of the Subsidiary Body on Scientific, Technical and Technological Advice**;	
VIII/21	Para 9		*Emphasizes* the **urgent need**, especially in developing countries, **to build capacities relating to deep seabed biodiversity, including taxonomic capacity; to promote scientific and technical cooperation** and technology transfer; and to exchange information regarding activities undertaken within the deep seabed beyond the limits of national jurisdiction.	
VIII/22	Para 7	The Conference of the Parties	*Requests* the Executive Secretary, in collaboration with Parties, **relevant organizations** and indigenous and local communities, **to compile and analyse case-studies on successful and unsuccessful implementation of integrated marine and coastal area management**.	COP-08&id=11036