Appendix 2

Table 1. Contribution of biodiversity research to achieving Brazil's National Biodiversity Targets, corresponding to the CBD targets

	National Target (from: https://www.cbd.int/nbsap/targets/default.shtml)	**Examples for the contribution of biodiversity research, such as Brazil's PPBio, to reach the national target**
National Target 1	By 2020, at the latest, Brazilian people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.	Biodiversity research directly contributes to the knowledge on distribution of biodiversity, especially through the description of new plant, animal and fungus species.
National Target 2	By 2020, at the latest, biodiversity values, geodiversity values, and sociodiversity values have been integrated into national and local development and poverty reduction and inequality reduction strategies, and are being incorporated into national accounting, as appropriate, and into planning procedures and reporting systems.	Knowledge on distribution of biodiversity; development of accessible data basis (SiBBr).
National Target 3	By 2020, at the latest, incentives harmful to biodiversity, including the so-called perverse subsidies, are eliminated, phased out or reformed in order to minimize negative impacts. Positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the CBD, taking into account national and regional socio economic conditions.	Understanding of ecosystem processes and drivers of ecosystem dynamics, including threat status and sustainable use options are direct results of biodiversity research.
National Target 4	By 2020, at the latest, governments, private sector and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption to mitigate or prevent negative impacts from the use of natural resources.	The basis for these steps of mitigation or prevention of negative impacts on natural resources is the understanding of ecosystem processes and drivers of ecosystem dynamics, including sustainable use options, as provided by biodiversity research.
National Target 5	By 2020, the rate of loss of native habitats is reduced by at least 50% (in comparison with the 2009 rate) and, as much as possible, brought close to zero, and degradation and fragmentation is significantly reduced in all biomes.	Biodiversity data, as provided by biodiversity research, is important to inform priority areas for conservation.

National Target 6	By 2020, all stocks of any aquatic organism are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overharvesting is avoided, recovery plans and measures are in place for 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, when scientifically established.	Biodiversity data, as provided by biodiversity research, is important to inform sustainable management practices.
National Target 7	By 2020, the incorporation of sustainable management practices is disseminated and promoted in agriculture, livestock production, aquaculture, silviculture, extractive activities, and forest and fauna management, ensuring conservation of biodiversity.	Biodiversity data, as provided by biodiversity research, is important to inform sustainable management practices.
National Target 8	By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.	Effects of pollution on ecosystems and biodiversity must be known. Biodiversity research provides this information.
National Target 9	By 2020, the National Strategy on Invasive Alien Species is fully implemented, with the participation and commitment of states and the elaboration of a National Policy, ensuring the continuous and updated diagnosis of species and the effectiveness of Action Plans for Prevention, Contention and Control.	Distribution and effects of invasive non-native species on natural systems, as well as the invasibility of the latter, must be known. Biodiversity research provides this information.
National Target 10	By 2015, the multiple anthropogenic pressures on coral reefs, and other marine and coastal ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.	Effects of human actions on coral reefs and coastal and marine ecosystems must be known. Biodiversity research provides this information.
National Target 11	By 2020, at least 30% of Amazonia, 17% of each of the other terrestrial biomes, and 10% of the marine and coastal areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through protected areas foreseen under the National System of Protected Areas (SNUC) Law and other categories of officially protected areas such as Permanent Protection Areas, Legal Reserves, and indigenous lands with native vegetation, ensuring and respecting the demarcation, regularization, and effective and equitable management, so as to ensure ecological interconnection, integration and representation in broader landscapes and seascapes.	Establishment of protected areas requires detailed biodiversity data (distribution of protected areas in space; adequate SNUC level; type of conservation actions/management). Biodiversity research provides this information.
National Target 12	By 2020, the risk of extinction of threatened species has been significantly reduced, tending to zero, and their conservation status, particularly of those most in decline, has been	Conservation status of endangered species needs to be evaluated; this includes

	improved.	distribution data. Biodiversity research provides this information.
National Target 13	By 2020, the genetic diversity of microorganisms, cultivated plants, farmed and domesticated animals and of wild relatives, including socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing the loss of genetic diversity.	Knowledge of genetic diversity data of wild species is necessary. This is increasingly in the focus of biodiversity research.
National Target 14	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, traditional peoples and communities, indigenous peoples and local communities, and the poor and vulnerable.	Ecosystem services and the role of biodiversity in providing them need to be analysed. Recently, ecosystem services have become a main theme in biodiversity research.
National Target 15	By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced through conservation and restoration actions, including restoration of at least 15% of degraded ecosystems, prioritizing the most degraded biomes, hydrographic regions and ecoregions, thereby contributing to climate change mitigation and adaptation and to combating desertification.	Adequate sites for conservation and restoration actions need to be known.
National Target 16	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.	Benefits provided by genetic resources must be known. Biodiversity research contributes to this research.
National Target 17	By 2014, the national biodiversity strategy is updated and adopted as policy instrument, with effective, participatory and updated action plans, which foresee periodic monitoring and evaluation.	Biodiversity data are necessary to implement the national biodiversity strategy. Data must be made available to different sectors of society for participatory action. Biodiversity research is the main provider of these data.
National Target 18	By 2020, the traditional knowledge, innovations and practices of indigenous peoples, family rural producers and traditional communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, in accordance with their uses, customs and traditions, national legislation and relevant international commitments, and fully integrated and reflected in the implementation of the CBD, with the full and effective participation of indigenous peoples, family rural producers and traditional communities, at all relevant levels.	Effects of traditional practices on biodiversity and their contribution to biodiversity conservation must be known. Biodiversity research includes the relation of traditional people to nature and biodiversity.

National Target 19	By 2020, the science base and technologies necessary for enhancing knowledge on biodiversity, its values, functioning and trends, and the consequences of its loss, are improved and shared, and the sustainable use of biodiversity, as well as the generation of biodiversity-based technology and innovation are supported, duly transferred and applied. By 2017, the complete compilation of existing records on aquatic and terrestrial fauna, flora and microbiota is finalized and made available through permanent and open access databases, with specificities safeguarded, with a view to identify knowledge gaps related to biomes and taxonomic groups.	Biodiversity research is essential in all aspects of this target, from the compilation and organization of data to the analysis of distribution patterns and ecosystem processes. SiBBr is to make the data available.
National Target 20	Immediately following the approval of the Brazilian targets, resources needs assessments are carried out for the implementation of national targets, followed by the mobilization and allocation of financial resources to enable, from 2015 on, the implementation and monitoring of the Strategic Plan for Biodiversity 2011-2020, as well as the achievement of its targets.	Biodiversity research is essential to define priority resources needs for the implementation of national targets.