



Brazil-Germany Climate Cooperation Initiative: Joint Initiatives for Adaptation to Climate Change in Brazil

Photo ©Michael Scholze



Published by
Deutsche Gesellschaft für Internationale
Zusammenarbeit (GIZ) GmbH
Bonn and Eschborn

GIZ Office Brasilia
SCN Quadra 01 bloco C sala 1501
Ed. Brasilia Trade Center
70.711-902 Brasilia/DF
T +55-61-2101-2170
F +55-61-2101-2166

gizbrasilien@giz.de
www.giz.de/brasilien

Projects Director: Michael Scholze
adaptacao@giz.de

Latest update: December, 2018

Partner Ministry of the Environment (MMA)
Secretariat of Climate Change and Forests (SMCF)
Climate Policy Department
SEPN 505 Block "B", Room 314 CEP 70.730-542
Brasília – DF – Brazil
adaptacao@mma.gov.br

Minister of the Environment Edson Duarte
Secretary of Climate Change and Forests Thiago de Araújo Mendes

On behalf of Federal Ministry of Environment, Nature Conservation
and Nuclear Safety (BMU)

BMU Bonn	BMU Berlin
Robert-Schumann-Platz 3	Stresemannstraße 128-130
53175 Bonn, Germany	10117 Berlin, Germany
T +40 (0)228 99 305-0	T +49 (0)30 18 305 0
F +49 (0)228 99 305-3225	F +49 (0)30 183054375
poststelle@bmu.bund.de	
www.bmu.bund.de	

Context of Cooperation for Adaptation to Climate Change

The governments of Brazil and Germany are cooperating at political and technical levels in order to attain the goals defined under the Paris Agreement.

In this context, through the financial and technical cooperation from the Federal Ministry of the Environment, Nature Conservation and Nuclear Safety (BMU), Germany is collaborating with several projects focused on adaptation to climate change in Brazil.

These actions are being implemented by several Brazilian Ministries, particularly the Ministry of the Environment (MMA) with the support of the German Cooperation for Sustainable Development – Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.

Reasons for Adaptation

The impacts of climate change are already observed in Brazil. In different parts of the country, changes to local climate have been recorded such as annual seasons shifting and extreme events intensifying, including unprecedented flooding in Amazonia, severe droughts wiping out harvests in the South and Northeast, and water supplies threatened in the Southeast and Center-West. The consequences of these effects include temporary cutbacks in hydropower generation.

Brazilian Policies

Faced by the adverse effects of climate change impacts on natural, human, agricultural and infrastructure systems, the Brazilian government has been drawing up an adaptation agenda whose main political tools consist of Brazil's NDC and the National Climate Change Adaptation Plan (NAP), focusing on managing climate risks in Brazil.

ADAPTATION PROJECTS



Providing Support to the Government of Brazil in the Implementation of its National Agenda for Adaptation to Climate Change (ProAdapta)

COORDINATION: MINISTRY OF THE ENVIRONMENT

Working together and generating knowledge to make Brazil more resilient

Support for the Ministry of the Environment in coordinating Brazil's National Adaptation Agenda in the fields of communication, monitoring, climate finance, capacity-building and other aspects. The activities include also an exchange of experiences with other countries and building up links among different sectors, federal states, and municipalities.



Enhancing climate services for infrastructure investment (CSI)

COORDINATION: MINISTRY OF THE ENVIRONMENT

Preparing Brazil's infrastructure for the impacts of climate change

The objective of CSI is to boost information levels on adaptation to climate change in the infrastructure sector, in order to ensure that climate risks are taken into consideration during the planning and implementation of infrastructure projects.



Biodiversity and Climate Change in the Coastal Forest (Mata Atlântica) region

COORDINATION: MINISTRY OF THE ENVIRONMENT

Benefiting from nature in order to adapt to climate change

The objective of the project is to insert an ecosystem-based adaptation approach into instruments for land use planning, through increasing awareness and building up capacities among key actors, in addition to urging experimental pilot projects.



Climate Change Policies Program (PoMuC)

COORDINATION: MINISTRY OF THE ENVIRONMENT

Mapping the impacts of climate change in Brazil in order to guide adaptation actions

Besides the Ministry of Environment, the program involves other ministries as well, including the Ministry of Finance. Consisting of various components on climate policy, including one on adaptation, support is provided to project partners through studies underpinning a better understanding of vulnerabilities to climate change at the level of municipalities in Brazil, particularly droughts, landslides and floods. These findings will provide input for fine-tuning policies and planning adaptation measures.



Adapting public investment to climate change in Latin America (Ipacc)

COORDINATION: MINISTRY OF PLANNING, DEVELOPMENT AND MANAGEMENT

Making public investments more resilient to climate change

The project aims to encourage integration of adaptation to climate change in public funding and investments in Brazil, Peru and Colombia.

Main Cooperation Themes

Joint initiatives encompass a wide variety of areas related to adaptation to climate change



COOPERATION FOR CREATING BETTER KNOWLEDGE OF CLIMATE CHANGE IMPACTS

Increasing knowledge base of climate change is a precondition for understanding potential future impacts and being able to adapt to them.

In the context of the Brazil-Germany Climate Cooperative Initiatives, partnerships were established with scientific institutions, such as Brazil's National Space Research Institute (INPE) and the National Monitoring and Warning Center for Natural Disasters (CEMADEN), among others.

EXAMPLES OF INITIATIVES



Biophysical Impacts of Climate Change on the Atlantic Rainforest

Climate risks were identified across the entire area subject to the Atlantic Rainforest Act¹. Seven potential impacts were analyzed: flooding, progressive water erosion, landslides, soil water, agri-climatical zoning, the occurrence of phyto-physiognomies, and dengue fever distribution². Based on the findings, more than 700 climate extremes and parameter maps were generated, in addition to charting the potential biophysical impacts of climate change, with more detailed analyses of some regions³.



Mapping Climate Change Impacts for all municipalities in Brazil

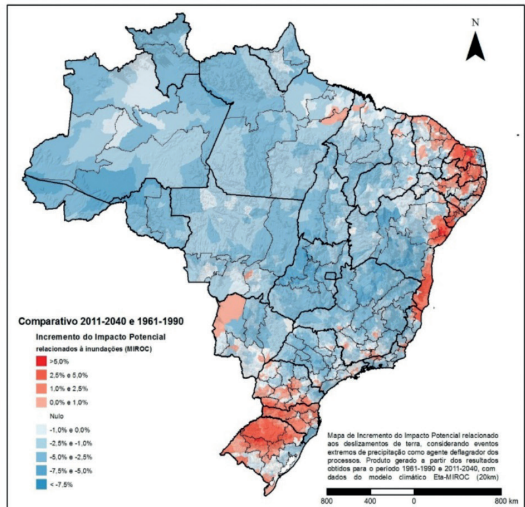
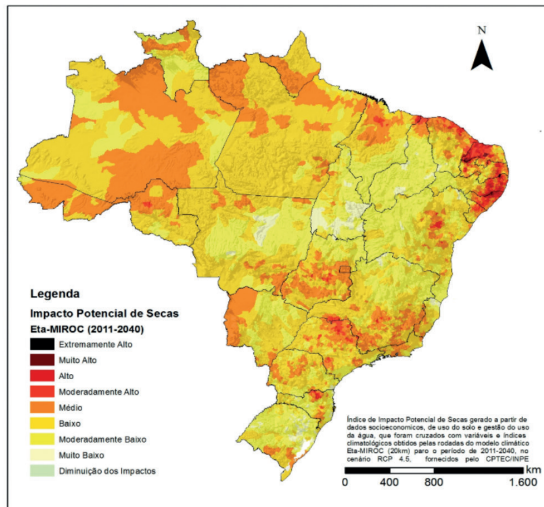
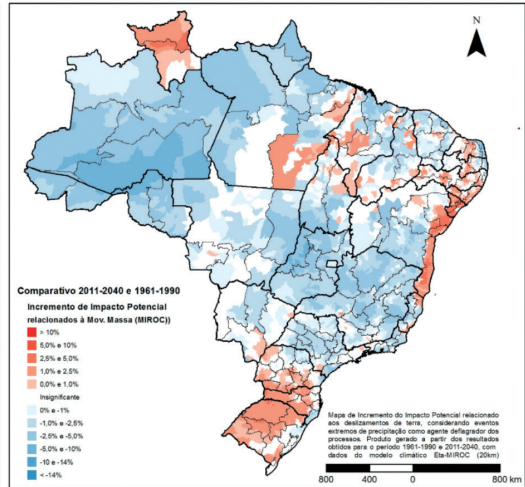
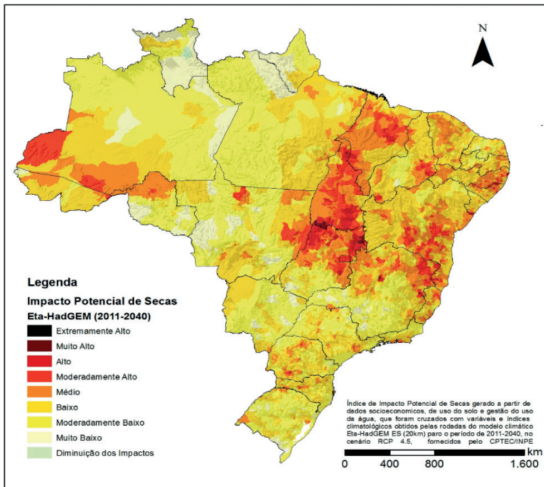
For each of Brazil's 5,570 municipalities, potential climate impacts related to droughts, landslides and floods were identified and mapped as follows:

1. Law N° 12,651, dated May 25, 2012.

2. <https://bit.ly/2FPpEpj>

3. <https://bit.ly/2FQf9lO>

Maps showing the potential impacts of climate change on Brazilian municipalities: droughts, landslide and floods





IMPROVING RELATIONSHIPS BETWEEN CLIMATE INFORMATION PROVIDERS AND USERS

Climate information is often insufficient and access to the decision makers still remains limited.

At the same time, it is necessary to support the providers in the improvement of climate services and to customize them to specific need of users.

EXAMPLES OF INITIATIVES



Baseline for Information Providers and Users

A stocktaking of institutions engaged in the field of collection of climate data in Brazil identified more than a hundred climate service providers nationwide. As a next step, a tool that links these organizations to users of climate data will be developed.



Online Platform with Regional Modeling

Supported by GIZ, an online platform for Climate Change Projections for South America, regionalized through the ETA Model (ProjETA), has been set up by Brazil's National Space Research Institute (INPE). Through this platform, climate simulations can be run by selecting a specific location, climate scenario and frequency of a particular climate event happening, as well as related variations (rainfall, temperature, evaporation etc). Completely open to internet users, this model allows information to be used with easy access.



CLIMATE RISK ANALYSIS TOOLS FOR SELECTED SECTORS AND INFRASTRUCTURES

In relation to infrastructure, the impacts of climate change vary widely, depending on sector contexts and local conditions in which operations became realized.

Customized tools need to be designed for analyzing climate risks, for increasing resilience of approaches and operations.



Solutions for adapting the Itajaí Port and transmission lines in Santa Catarina State

EXAMPLES OF INITIATIVES



Adaptation Solutions for the Port of Itajaí and Powerlines in Santa Catarina State

A partnership with a group of engineers from Canada will train Brazilian technical staff in the application of a climate risk analysis protocol that also pinpoints the need to adapt two infrastructure assets in Santa Catarina State: the Port of Itajaí, which has been subject to recurrent flooding during the past few years, caused by heavy rainfall; and powerlines managed by the Eletrosul utility, whose operations are adversely affected by increasingly stronger gales in this region.



Climate Risk Analysis in the Financial Sector: Working with BNDES

The project collaborates with Brazil's National Bank for Economic and Social Development (BNDES) which acts as the main source of funding for infrastructure projects in Brazil. These long-term assets may well be susceptible to ongoing and future climate changes. A tiered knowledge management process is being developed, which involves capacity-building for the team of analysts on developing methodologies and tools for applying climate risk concepts when analyzing new projects.



INCLUSION OF A 'CLIMATE LENS' IN PLANNING AND DECISION-MAKING PROCESSES

In many cases, adaptation does not mean doing something that is completely new. The concept consists of anticipating possible impacts of climate change on activities to be implemented, and seeking ways of reducing climate risks and economic losses resulting from them.

Cooperation and partnerships help to show how a 'climate lens' may be deployed in planning and decision-making processes.

EXAMPLES OF INITIATIVES



Including Adaptation to Climate Change in an Agricultural Planning Tool

Brazil's Ministry of Agriculture, Livestock and Supply (MAPA) has been striving to upgrade the Climate Risk Agricultural Zoning (ZARC) methodology, which is an agricultural planning tool that currently does not take the potential effects of future climate changes into consideration. In Paraná State, a pilot project for analyzing the likelihood of soybean productivity losses in future climate scenarios is currently being prepared, for subsequently upgrading the ZARC methodology in this State. Agriculture requires large amounts of government input and is extremely vulnerable to climate change. This is why the government needs to refine its planning instruments in order to ensure more efficient allocation of public funding.



ENGAGEMENT OF KEY STAKEHOLDERS IN THE ADAPTATION PROCESS

The inclusion of adaptation to climate change is necessary at different governmental (sector, federal state, and municipal) as well as non-governmental levels, particularly in the private sector and in civil society.

Through cooperation between Brazil and Germany, innovative and replicable examples showing how different players can contribute to adaptation to climate change in Brazil are established.



Participants of a workshop between the Ministry of the Environment, GIZ and the Municipal Commission on Adaptation to Climate Change of Santos

EXAMPLES OF INITIATIVES



How a Municipality Can Adapt: Case Study of Santos

With a population of around 430,000, Santos is the municipal hub of the Baixada Santista Metropolitan Region on the southern coast of the federal state of São Paulo. The city encompasses the largest port in Latin America, which is the driving force behind the local economy, together with tourism and fishing, ranking Santos fifth among economically vital towns of Brazil that are not State capitals.

Being well aware of the impacts of increasingly higher tides, studies were conducted for Santos demonstrating its exposure to storms, coastal erosion and saltwater intrusion. As the sea level rises and climate change continues, impacts are to become even more severe.

In cooperation with the Municipal Commission on Adaptation to Climate Change of Santos, the Municipal Adaptation Plan is being reviewed, intending to orient its master plan and sectoral strategies, while also providing input for the overall municipal planning. All data can also make use of and information will be filed in the AdaptaClima Platform⁴, so that other municipalities can also make use of the Santos case study framework.

4. <http://adaptaclima.mma.gov.br/>



SHOWCASING THE BENEFITS OF NATURE IN THE ADAPTATION PROCESS – Ecosystem-Based Adaptation

The purpose of opting for an ecosystem-based adaptation approach is to benefit from the functioning of nature to make environments more resilient to the effects of climate change through rehabilitating degraded ecosystems. This means that protecting ecosystems and rehabilitating forests and wellsprings may well reduce the impacts of climate change.

Such actions will usher in many parallel benefits as well, in environmental, social and economic terms, which is why they should be deployed wherever and whenever possible.

EXAMPLES OF INITIATIVES



Integrating Adaptation in Municipal, Conservation and Basin Plans

In the broader framework of adaptation to climate change, areas encompassed by the Atlantic Rainforest biome – today largely devastated and fragmented – were selected for the implementation of a natural ecosystem reconstruction approach. Activities included courses designed to increasing the awareness of local administrators of the importance of including this approach in Municipal Atlantic Rainforest Plans, as well as Conservation Unit Stewardship Plans, Municipal Master Plans and River Basin Plans.



CAPACITY DEVELOPMENT AND INSTITUTIONAL STRENGTHENING

Adaptation is a new topic, and hence comes along with heavy demands for capacity building at the individual, institutional and systemic levels.

This is why capacity development is included in all cooperation projects.

A range of capacity-building courses has already been prepared and conducted.

EXAMPLES OF INITIATIVES



Ecosystem-based Adaptation Courses

Capacity-building courses were completed by more than 250 key actors from public institutions at the local, regional and national levels, as well as academia, organized civil society and the private sector, through classes and workshops, some of which focused on institutional development. Training courses have also been held for information multipliers. In this context, specialists were brought in from Germany and a wide variety of materials was produced to make sure the efficient dissemination of learning material.



Capacity-Building for the Ministry of Transport

The Ministry of Transport is in charge of a broad range of potentially vulnerable infrastructure items (highways, bridges, ports etc.), which makes important raising awareness of climate risks for infrastructure for ministerial staff, by launching a discussion of the relevance of this topic for the sector. Consequently, more than 40 staff member of the Ministry of Transport have benefited from capacity-building on climate change and risks related to public infrastructure.



SUPPORT FOR THE COORDINATION OF THE ADAPTATION AGENDA AND PUBLIC POLICIES

Through the Brazil-Germany climate cooperation, support is being provided to the Ministry of the Environment in the coordination of Brazil's National Climate Change Adaptation Agenda.

Support activities include monitoring and evaluation of the NAP, refinement of a digital adaptation platform (AdaptaClima) and input for the implementation of Brazil's adaptation goals under the Paris Agreement (Brazilian NDC).

EXAMPLES OF INITIATIVES



Adaptation Anchored in Public Policies

The Ministry of the Environment has been advised by GIZ on the process of including ecosystem-based adaptation in public policies, such as sector-specific strategies under the NAP, and the National Policy and Plan on Native Plantlife Rehabilitation (PROVEG/PLANAVEG). Contributions are also made to Brazil's National Biodiversity Policy and the National Fines Conversion Program run by the Brazilian Institute for the Environment and Renewable Natural Resources (IBAMA), in addition to Biome Monitoring Policy Programs and Municipal Atlantic Rainforest Plans.



INTER-COUNTRY EXCHANGES ON ADAPTATION

Adaptation to climate change is a relatively new challenge all over the world, which is why there is ample potential for exchanges of experiences among governments and sectors.

Cooperation projects have brought professionals to Brazil and several exchange trips have been organized with other countries.



Adapting public investment to climate change in Latin America (IPACC II): Fostering exchange between Peru, Brazil and Colombia

EXAMPLES OF INITIATIVES



Inter-Country Exchange

One central approach for disseminating experiences in the context of IPACC consists in organizing regional dialogues among participant countries. This end, countries are organizing technical trips that showcase their respective areas of progress under the project.

Brazil hosted two meetings where local experiences were presented, together with work under way at benchmark institutions, such as the National Space Research Institute (INPE) and the National Monitoring and Warning Centre for Natural Disasters (CEMADEN) on issues related to climate services, as well as the Brazilian Agricultural Research Enterprise (EMBRAPA) on the topic of public policies for agriculture.

Peru and Colombia engaged in exchanges of experiences with Brazilian experts in the fields of tourism, transportation and agriculture.

Countries in Latin America will also benefit from experiences built up under the project through capacity-building activities and accessing the main IPACC results through a learning and knowledge management platform that is currently still under development.



On behalf of:



Federal Ministry
for the Environment, Nature Conservation
and Nuclear Safety

of the Federal Republic of Germany

Implemented by

giz

Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH

