

apa

agência portuguesa
do ambiente

Instrumentos de política pública para ação climática – Adaptação

Webinar “Política climática em Portugal - o papel dos municípios”

22 de outubro, 2024

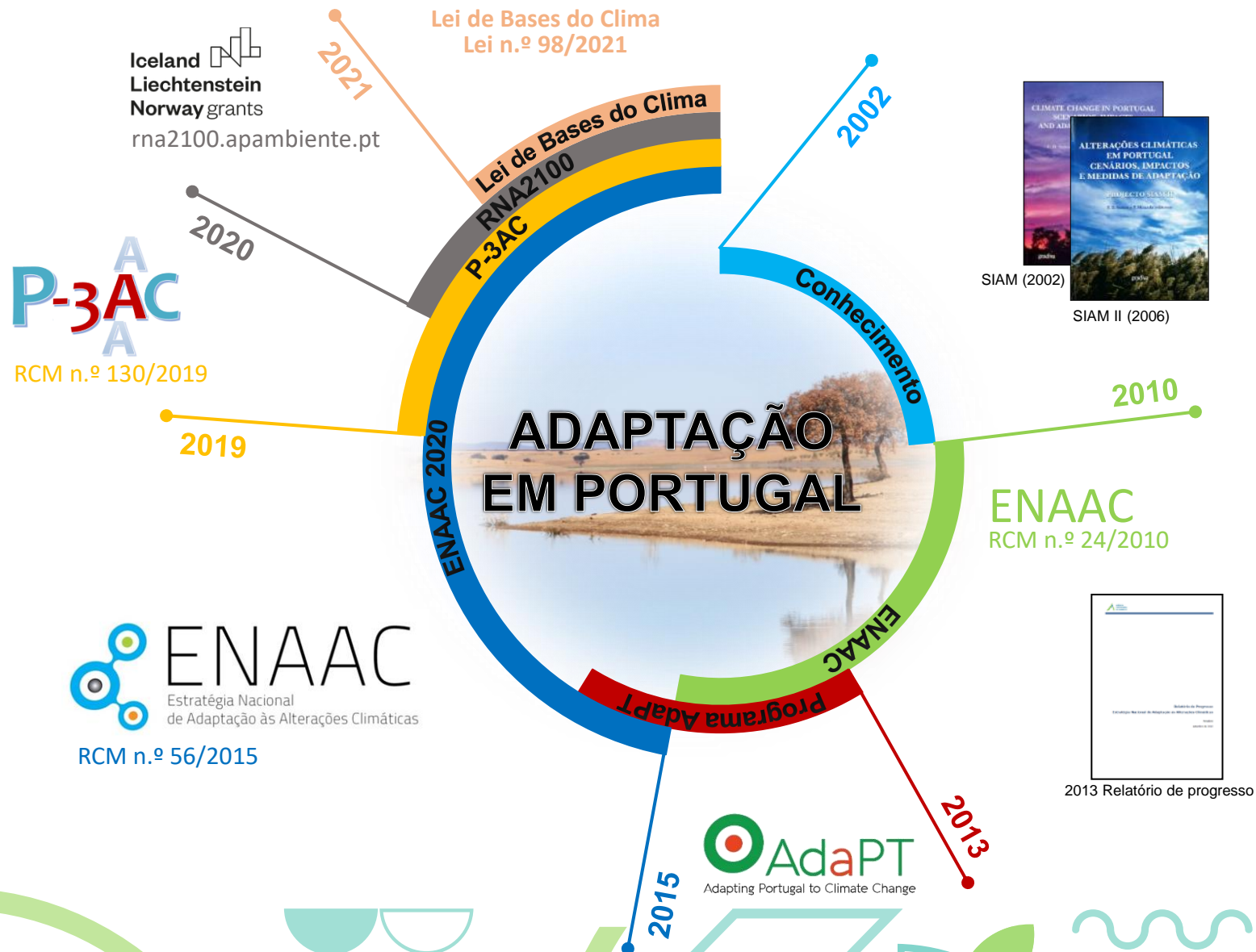
PEDRO BAPTISTA - Chefe de Divisão de Financiamento Sustentável e Adaptação
[Departamento de Alterações Climáticas](#)



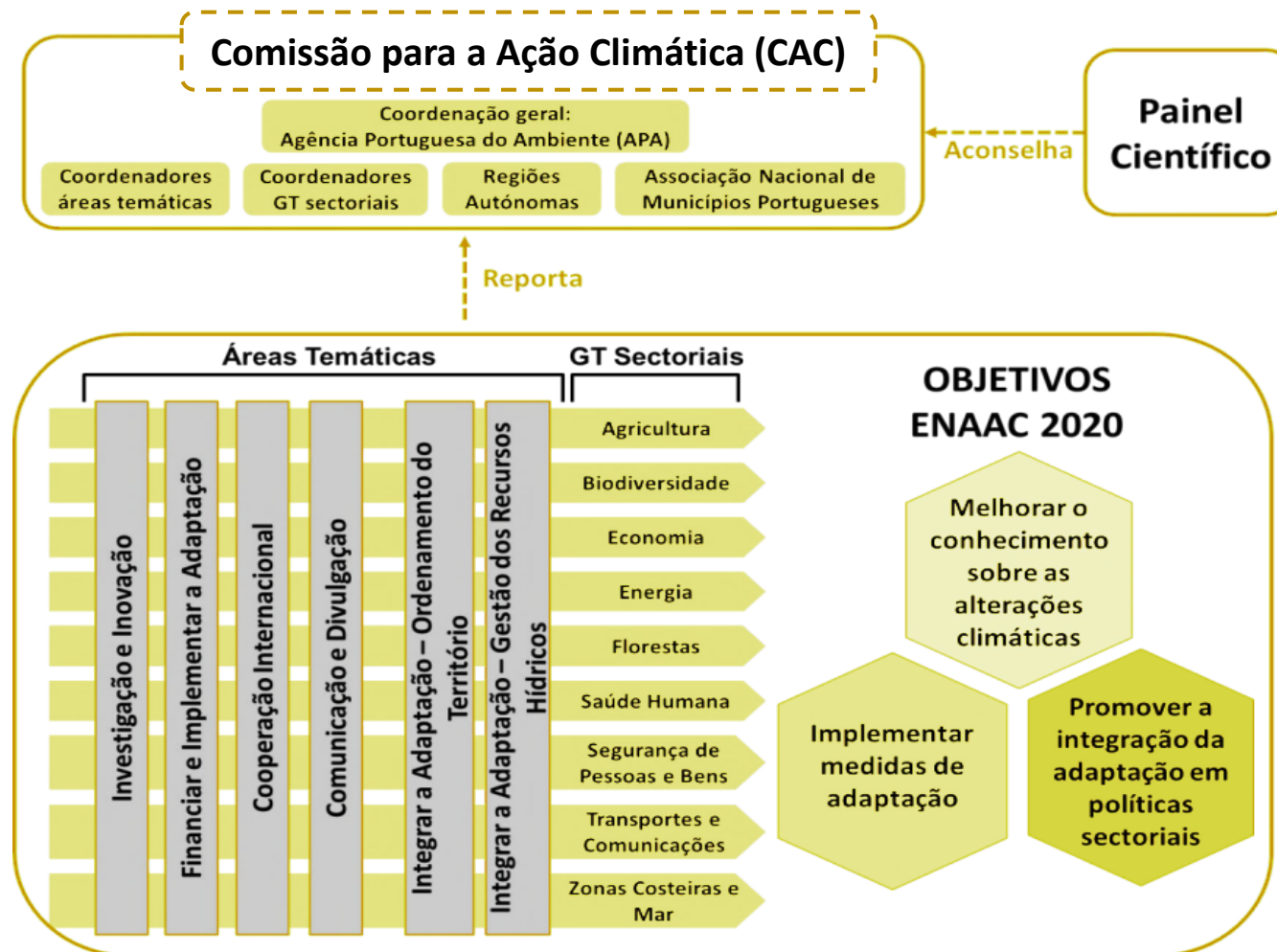
**REPÚBLICA
PORTUGUESA**

AMBIENTE E ENERGIA

Evolução das Políticas de Adaptação em Portugal



ENAAC 2020: Estrutura de Governança



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Agenda Temática de Investigação e Inovação - Alterações Climáticas

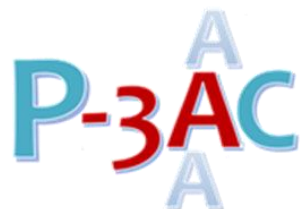
Roteiro Nacional para a Adaptação 2100



Melhorar o conhecimento sobre as alterações climáticas

Implementar medidas de adaptação

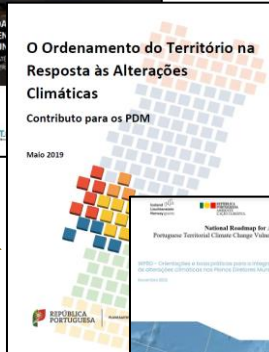
Promover a integração da adaptação em políticas sectoriais



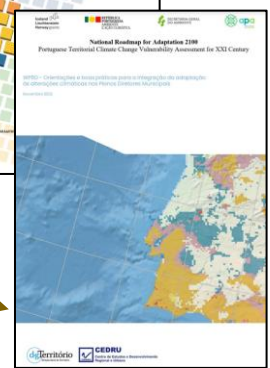
Integração das opções de adaptação Nos instrumentos de gestão territorial de âmbito municipal (ClimAdaPT.Local, 2016)



O Ordenamento do Território na Resposta às Alterações Climáticas - Contributo para os PDM (CCDR-LVT, 2019)



Orientações e boas práticas para a integração da adaptação às alterações climáticas nos PDM (RNA2100, 2023)



Revisão da ENAAC em 2025 - Panorama da Adaptação



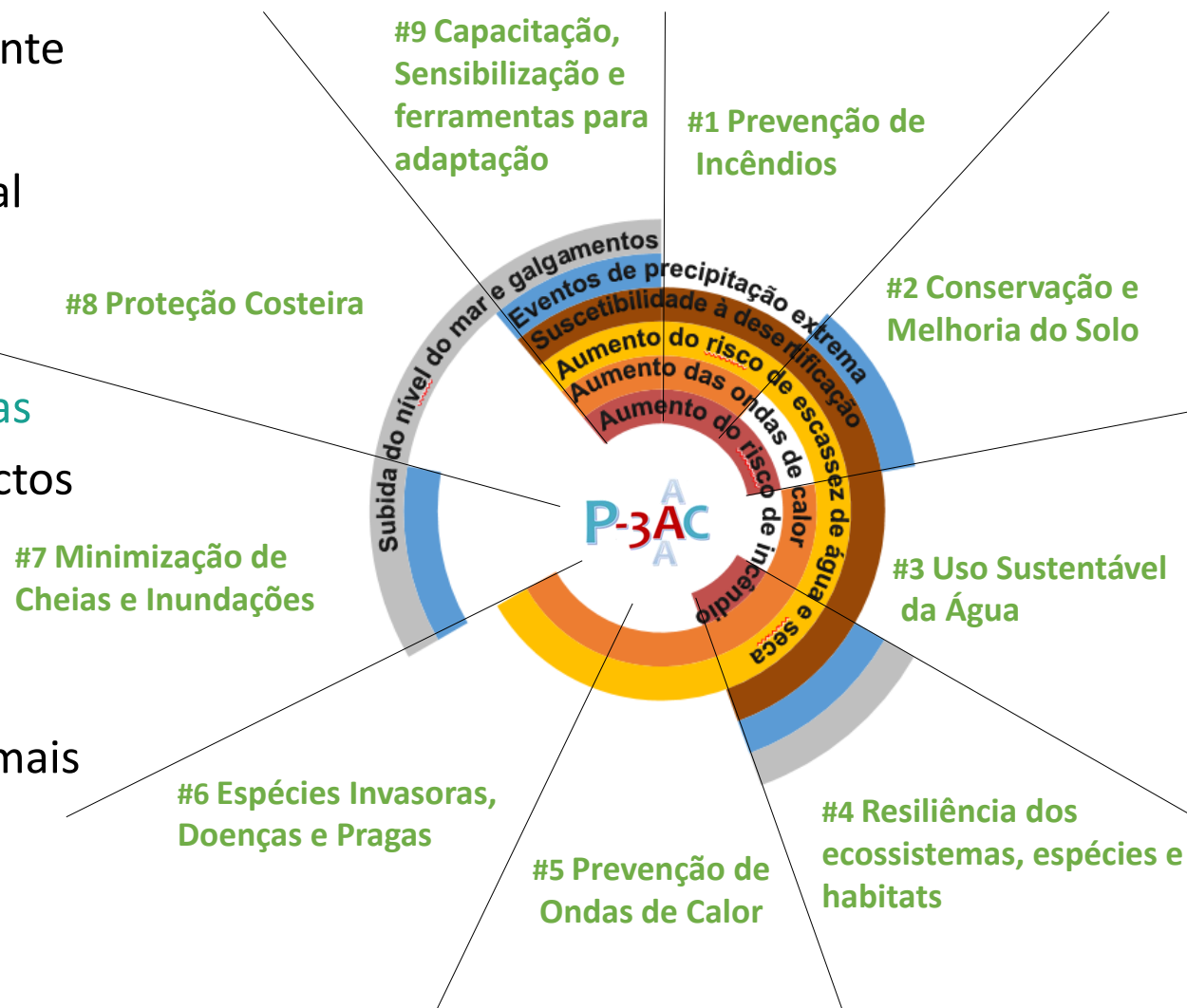
Programa de Ação para a Adaptação (P-3AC)

Baseia-se no melhor **conhecimento científico** existente e em todos os exercícios de planeamento em adaptação à escala nacional, setorial e local/regional

Identifica principais **impactes e vulnerabilidades** do território nacional às alterações climáticas e **medidas de Adaptação** (prioritárias) para reduzir esses impactos e vulnerabilidades

Guia orientador para:

- Promover a implementação de ações de carácter mais estrutural
- Apoiar os exercícios de definição de políticas e os instrumentos de política e de financiamento



P-3AC | #1 Prevenção de incêndios

- Regional systems for collection and interim storage of residual biomass from forestry and agriculture activities

VALORIZAÇÃO
ECONÓMICA DA
BIOMASSA

- (Re)forestation with fire resilient species
- Control of excessive densities of post-fire natural regeneration
- Agricultural mosaic
- Grazing areas to control spontaneous vegetation
- Shrub removal in areas adjacent to road, rail and built structures

FAIXAS E MANCHAS DE
DISCONTINUIDADE

- Reconversion and reconfiguration of electric lines (e.g. underground cables, changes of route) and telecommunications networks
- Traffic warning, cut-off and diversion systems
- Information systems (e.g. surveillance systems, population warning)

RECONFIGURAÇÃO DE
INFRASTRUTURAS E
SISTEMAS DE SUPORTE

P-3AC | #2 Conservação e melhoria do solo

- Structures / natural barriers for erosion control in burned areas
- Consolidation and recovery of embankments and banks of watercourses favouring natural engineering techniques
- Restoration / rehabilitation of riparian areas
- Interlining of permanent crops
- Understorey and biodiverse pastures
- Green cover in soils in the rainy season and between the trees
- No-tillage; rotation of crops with different types of root systems

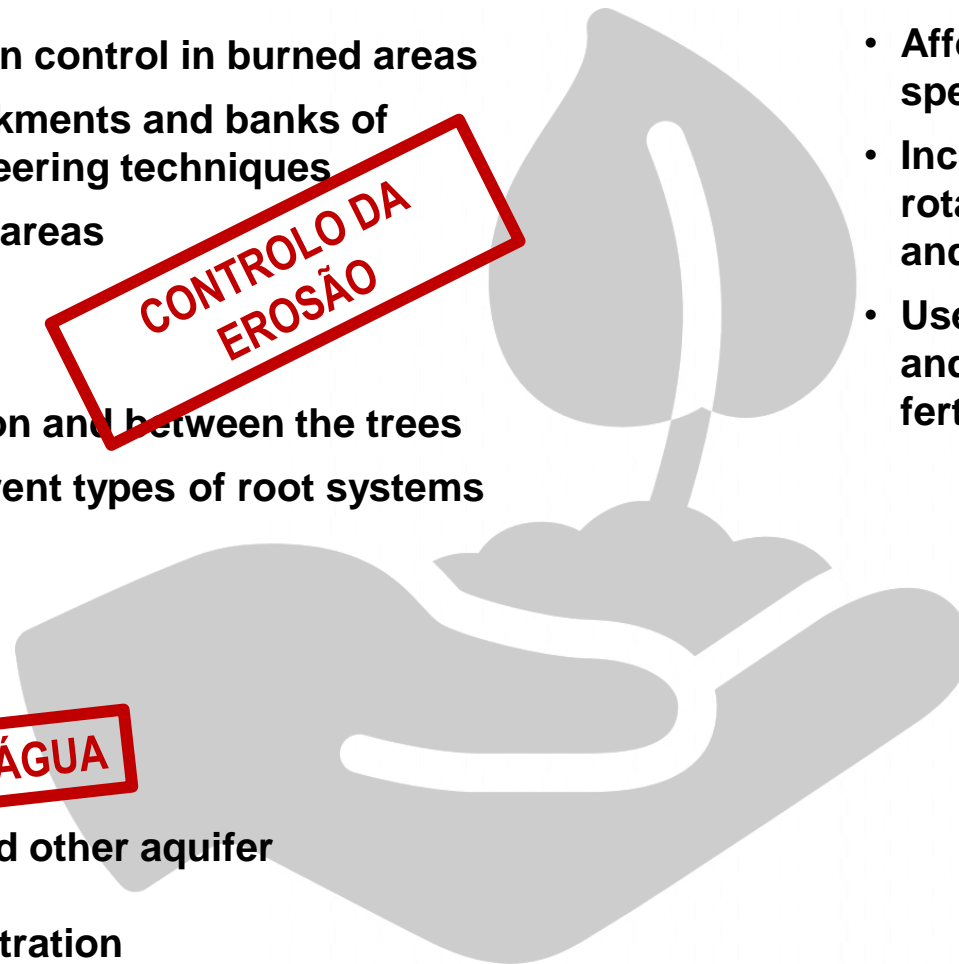
CONTROLO DA EROSÃO

- Afforestation with soil improvement species
- Incorporation of manure and compost, rotations with legumes, cover crops and agricultural or forestry residues
- Use of livestock effluents, compost and by-products of agroindustries as fertilizer materials

ESTRUTURA E COMPOSIÇÃO DO SOLO

RETENÇÃO DE ÁGUA

- Infiltration gardens and other aquifer recharge solutions (e.g. trenches and infiltration channels)



P-3AC | #3 Uso sustentável da água

- Reabilitação de sistemas de distribuição de água e monitorização de perdas
- Sistemas de rega por aspersão, micro aspersão e gota-a-gota em espaços verdes
- Espaços verdes com espécies adaptadas às condições edafoclimáticas locais
- Utilização de águas pluviais ou residuais na limpeza urbana, rega de espaços verdes e em sistemas de aquaponia/hidroponia

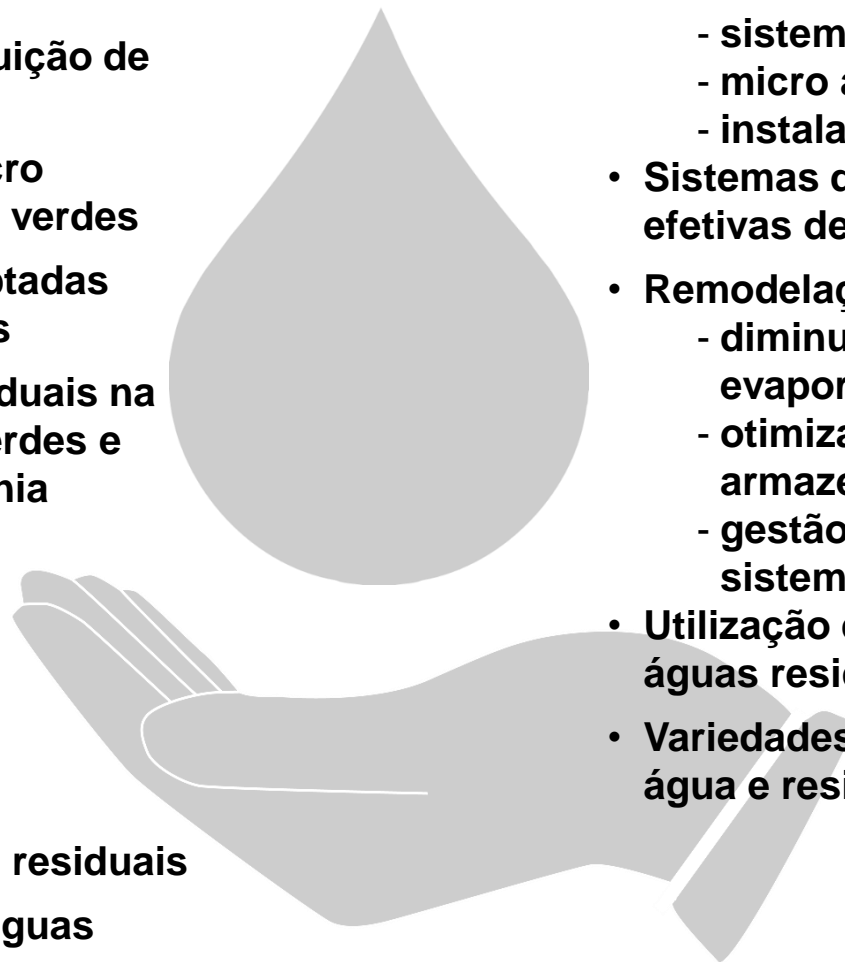
URBANO

INDUSTRIA

- Reutilização de águas residuais
- Aproveitamento das águas pluviais

- Práticas de regadio de poupança de água
 - sistemas por aspersão
 - micro aspersão e gota-a-gota
 - instalação de contadores nas captações
- Sistemas de monitorização das necessidades efetivas de água das culturas
- Remodelação das infraestruturas de rega
 - diminuição de perdas (transporte e evaporação)
 - otimização da capacidade de armazenamento
 - gestão mais eficiente de métodos e sistemas de rega
- Utilização de águas pluviais e reutilização de águas residuais tratadas
- Variedades com elevada produtividade da água e resistentes ao *stress* hídrico

AGRICULTURA



P-3AC | #4 Resiliência dos ecossistemas

- Focus on vulnerable species of fauna
 - Creating of microhabitats in areas occupied by monocultures in agricultural and forestry ecosystems relevant to amphibians and reptiles
 - Passage devices in dams for vulnerable freshwater and migrant fishes
 - Wildlife passages/crossings on the highway and railroad
 - Conservation of temporary pond systems
- REFÚGIOS E CORREDORES ECOLÓGICOS**
- Focus on the distribution areas of endemic species
 - Focus on small intermittent coastal basins with endemic endangered species of freshwater fish
 - Focus on relevant areas for the conservation of vulnerable amphibian and freshwater reptile populations
 - Conservation and rehabilitation of watercourses, maintaining environmental flows and river continuum
 - Regulation of abstractions for irrigation in summer refuges for vulnerable species of freshwater and migrant fish
- INTERVENÇÃO EM GALERIAS RIPÍCOLAS**
- Adaptation of existing *ex situ* breeding conditions at aquaculture centres
 - Implementation of endemic endangered species *ex situ* breeding plans
 - Promote and enhance the fauna and flora genetic heritage
- CONSERVAÇÃO DO PATRIMÔNIO GENÉTICO**

P-3AC | #5 Prevenção das ondas de calor

INFRASTRUTURAS VERDES

- Urban gardens
- Green roofs and facades
- Green areas
- Use of drought resistant vegetation and smart irrigation systems

- Warning systems for the general public and public transport users
- Awareness actions on heat waves events

COMUNICAÇÃO

- Shading areas (e.g. afforestation and exterior awnings and canopies between buildings)
- Ventilation corridors
- Thermoregulation by nebulization systems
- Drinking fountains
- Shading / cooling equipment in:
 - Public transport infrastructure and rolling stock (vehicles, stops & stations, parking lots)
 - Public buildings (schools, hospitals and health centres)
 - Private Social Solidarity Institutions supporting children and elderly

SOMBREAMENTO E ARREFECIMENTO



P-3AC | #6 Espécies invasoras, doenças e pragas

- Valorisation of genetic material of agricultural and forest varieties and species in order to reduce susceptibility to emerging diseases and pests

VALORIZAÇÃO DO MATERIAL GENÉTICO

CONTROLO DE DOENÇAS E ESPÉCIES INVASORAS

- Prevention, control and eradication of emerging vector-borne diseases of agricultural and forestry ecosystems
- Control of invasive exotic species and eradication at priority sites for vulnerable species

INFORMAÇÃO E COMUNICAÇÃO

- Identification of risk areas and mapping into an electronic platform
- Creation of a centralized system for agricultural and forestry warnings (biotic and abiotic agents)
- Development of platforms of information, early warning and entrance routes of exotic species

VIGILÂNCIA

Enhancement of entomological surveillance through the expansion of the National Health Program for Surveillance of *Culicidae* Vectors



P-3AC | #7 Proteção de cheias

- Cleaning and regularization of water streams
- Ecological restoration and maintenance of riparian vegetation
- Clearance of floodways
- Removal of sediment and other river bed materials
- Removal of obsolete structures with no current function

RECUPERAÇÃO DOS PERFIS NATURAIS

- Rehabilitation of existing dams for torrential correction
- Protection infrastructures
- Adaptation of infrastructures such as: transportation, energy, communications, sanitation
 - Elevation of infrastructure
 - Side shields
 - Drainage systems
 - Interventions in cut slopes
 - Relocation
 - Infrastructure stability

PROTEÇÃO

- Remodelling of stormwater drainage networks on critical areas
- Permeable and roughness paving suitable to flow conditions
- Preferential surface run-off pathways
- Stormwater retention systems
- Infiltration trenches or wells
- Infiltration areas

DRENAGEM URBANA SUSTENTÁVEL

- Delimitation of preferential flooding areas and assure proper drainage conditions

- Retention basins
- Reconversion of impermeable surface areas
- Retention ditches perpendicular to slopes

ÁREAS DE INFILTRAÇÃO

- Maintenance / installation of hydrometric stations and updating of rating curves

P-3AC | #8 Proteção costeira

- Coastal defence structures (e.g. rise in elevation and rockfill)
- Reinforcement or relocation of transport and communications infrastructures

PROTEÇÃO

RESTABELECIMENTO NATURAL DO TRÂNSITO SEDIMENTAR

- Lagoon dredges for recharge of beaches, safeguarding the conservation of species and priority habitats
- Interventions to restore sediment in coastal systems
- Artificial feeding operations, including those of high magnitude (shots)

REABILITAÇÃO DE SISTEMAS COSTEIROS

- Naturalisation of dune systems with native species
- Maintenance and recovery of secondary dunes important for vulnerable species
- Protection and rehabilitation of coastal systems
- Interventions in cliffs
- Installation of appropriate warning signs

RECUO PLANEADO

- Removal of structures and buildings in high danger areas and renaturalisation
- Reconstruction on non-existent or low danger areas
- Land acquisition / expropriation for risk mitigation

P-3AC | #9 Capacitação, sensibilização e ferramentas

- Dissemination, education and awareness actions on climate change risks and adaptation measures
- Forecasting, warning and response systems

COMUNICAÇÃO

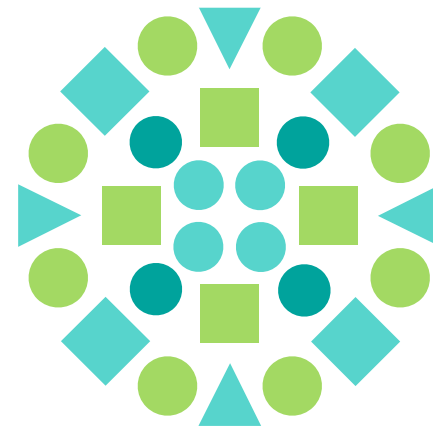
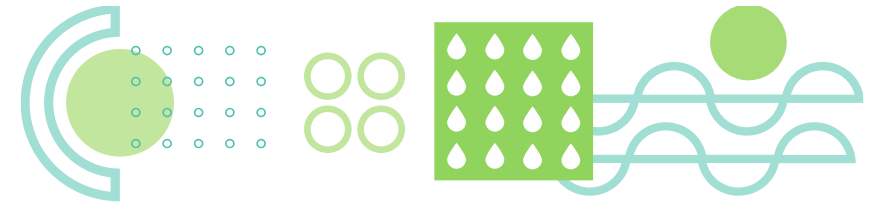
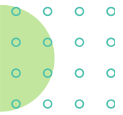
MONITORIZAÇÃO E TOMADA DE DECISÃO

- Establishment of national and sub-national monitoring and evaluation systems
- Development of tools to support decision-making and dissemination of good practices
- Development of a National Adaptation Platform

- Vulnerability assessment and adaptive management capacitation actions
- Production of information and knowledge, through monitoring of climate change impacts and risk mapping
- Development of Climate Change Adaptation Plans

CAPACITAÇÃO E PLANEAMENTO





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