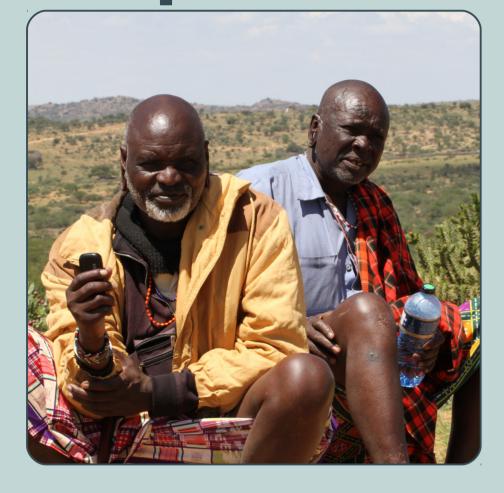
CABI

Tackling invasive alien species to reduce biodiversity losses and improve livelihoods



CABI is an intergovernmental not-for-profit organization established by a United Nations treaty-level agreement between 48 member countries. Our mission is to improve people's lives by providing information and applying scientific expertise to solve problems in agriculture and the environment.

CABI is developing a major new global programme to reduce biodiversity losses and protect vulnerable rural communities affected by invasive alien

IAS are of global concern, threatening biodiversity and the livelihoods of millions of poor rural communities. CABI has been addressing IAS and providing solutions since 1910 and our scientists have >700 years' collective experience in IAS prevention, early detection and control. CABI works with

countries, enabling them to achieve targets under the CBD. Since 2011, CABI has worked on IAS projects in 39 countries, and trained representatives from a further 45 countries. We advise governments and inform IAS policies and strategies. CABI is also working to create early warning systems and to mitigate impacts of IAS using biocontrol and other sustainable methods.

Controlling Opuntia stricta in Laikipia, Kenya Removing Barriers to Invasive Species Management in Production and Protection Forests International Plant Sentinel Network (IPSN) ISC - maximising use in ACP countries Project ISC-ICE ISC and the US Invasives Causing Extinction Invasive Species - the livelihoods threat Measuring the livelihood impacts of invasive alien species in East Africa Mitigating the Threats of Invasive Alien Spe-Pathway Evaluation and Pest Risk Manage-Restoring the flora of Robinson Crusoe Island Systematic review: The impact of invasive spe-Toolkits for invasive plants in East Africa Toolkits for invasive plants in Laikipia, Kenya Developing Vegetable IPM using a Local Far-Woody invasive alien species in East Africa Africa, Caribbean and Pacific **Botanical Gardens Conservation International** Convention on Biological Diversity **Global Environment Facility** South East Asia **United Nations Environment Programme**



Project TKIPL: Toolkits with identification guides and information on management options were developed to address threats posed by the spread of invasive alien plants to biodiversity resources in Laikipia County, Kenya

invasive plants, collating data for national and global datasets and creating identification and management toolkits to improve the implementation by eastern African national authorities to control invasives threatening biodiversity

Project ISC-ICE: Collating data on invasive

Project SR-ICE: A systematic review found broad scientific consensus that research and that the most common mechanisms of impact reported were



Project TKIPEA: Surveying large areas for

species affecting threatened species in the

invasive species play a devastating role in driving species extinctions, found gaps in predation, competition for resources and



Project WWEA: Raising awareness of the effects on biodiversity and livelihoods of invasive plants in Ethiopia, Kenya and

Project FORIS: Documentary on Acacia nilotica in Baluran national park (Indonesia) and impact on biodiversity: >25 TV channels, watched by >250 million people in >15 countries

Tackling the impact of invasi biodiversity and livelihoods Tackling the impact of invasive species on

Project FORIS: National Steering
Committees on IAS set up in Cambodia,
Indonesia, Philippines and Vietnam

Project WWEA: Influencing policy for 2 effects of woody invasives in Ethiopia,

Project MTIASIC: Policies, strategies, best practices for invasives embedded in Bahamas, Dominican Republic, Jamaica, St. Lucia and Trinidad & Tobago

Project FORIS: Regional training

Philippines and Vietnam on forest

workshops run in Cambodia, Indonesia,

Project MIPHA: Contributing to the

Programme; identifying invasive plants

etween Somalia and northeastern

Project COSL: Biocontrol of Opuntia

Project MLIEA: Addressing invasive alien

plant threats to East Africa's biodiversity

IGAD Biodiversity Management

Kenya, determining impacts

14 stricta in Laikipia County, Kenya

developing toolkits

implementation

resources; filling knowledge gaps and

Project RFRCI: Conservation,

propagation and re-establishment of

Contributions to the Nagoya Protocol

native plants on Robinson Crusoe Island,



Campaigning to highlight and address the impact of invasive species on

If left unchecked, invasive species can threaten rural communities whose livelihoods depend on agriculture and the health of biodiverse ecosystems. This is often compounded by a lack of awareness of the scale and impact of the problem by national and regional partners, a lack of collaboration between key sectors of government and a lack of accessible information. CABI is therefore launching a major new programme to protect vulnerable rural communities in the fight against them.

Building on our 100-year track record in invasive species management, CABI will deliver a unique global programme to support 50 million vulnerable farming families impacted by species that are out of control, threatening their livelihoods and costing economies billions of dollars (estimated at >\$US 183 billion per annum in sub-Saharan Africa, South and South East Asia together). We will use an environmentally sustainable, regional cross-sectoral approach to achieve comprehensive management.

By using available scientifically proven solutions, the devastation caused by invasive species can be halted and even reversed. Incomes can be improved, crop yields increased and land can be reclaimed.

CABI will use its practical scientific expertise and coordinate global ac-

CABI works with member countries to comply with the Nagoya Protocol

CABI works to conserve and use genetic resources of plant, animal or mi-

crobial origin and associated data in many ways across the world. To ensu-

re that our work complies with the CBD and the Nagoya Protocol, CABI

complies with national legislation developed under a country's commit-

ment to the CBD, for example, in the collection and inter-country move-

The Nagoya Protocol is designed to strengthen the links between biologi-

cal resources and their originating countries or communities. CABI is wor-

king with countries to put compliant best practice in place and making it

lobally, each country that is a signatory to the

CBD and the Nagoya Protocol will need to imple-

ment its own protocols in order to comply. Howe-

nember counties. CABI is bringing together rele-

vant information that is not currently available el-

resources and negotiating appropriate and mana-

ver, CABI is taking a lead and working with its

policy that engenders trust in using biological

geable agreements to ensure compliance.

ment of potential biological control agents.

work in a way that meets national legislation.

has aligned its practices accordingly. We work with countries to engender

trust, to facilitate science and to ensure that any benefits are shared. CABI

tion. The programme is based on three stages: trol/restoration. Together with its network of partners, CABI will bring together currently disconnected government ministries, NGOs, farmer groups, the private sector, public extension and research bodies across different regions to tackle the threats invasive species pose to livelihoods.



Project COSL: Biocontrol of Opuntia stricta in Laikipia County, Kenya

Project TKIPL: Addressing invasive plant threats to East Africa's biodiversity

Project WWEA: Mitigating the effects of woody IAS in Ethiopia, Kenya and Tanzania

Project VIMPTT: Overcoming constraints to IPM in Trinidad & Tobago Project FORIS: Pilot scale management systems against IAS in SE Asia

Developing biological control methods

Project ISC: >2k factsheets supporting RA and prioritizing of IAS and pathways

Project PERMIT: Enhanced pathway management for woody plants in Europe



Applying expertise in biocontrol to address invasive species threats and biodiversity conservation

Biological control is a safe, sustainable, effective and environmentally sound approach to the management of invasive species, and is an important tool in achieving the Aichi biodiversity targets. CABI has assisted national programmes to implement biological control of weeds, pests and plant diseases around the globe, using rigorous protocols abiding by international agreements, with many notable successes. Here are some examples of CABI's work:

• CABI identified and studied parasitoids that were highly successful in controlling the cassava and mango mealy bugs that were threatening the food security and livelihoods of millions of African farmers. • CABI developed the fungal based 'Green Muscle' a targeted product to help prevent locusts from reaching plague proportions in Africa. CABI identified and safety tested a rust fungus that is successfully controlling the highly damaging rubbervine weed in Australia, which has a cost to benefit ratio of 1:108. Lessons learned are being applied in Brazil. • In North America, leafy spurge control has been achieved using five flea beetles which were identified and tested by CABI scientists. This has resulted in an annual benefit of \$US 19.1 million.

• In Kenya, CABI partnered with local scientists to introduce a cochineal insect to help control the devastating invasion from the erect prickly pear. • A growing number of South East Asian and Paci-

fic countries are controlling the mikania weed with a rust fungus identified and safety tested by CABI. Evidence shows that this is having a significant impact.

• CABI is currently working with UK governmental organisations to implement the first weed biocontrol projects in Northern Europe, targeting Jacobs and Alimedeurope helpers and others. tal organisations to implement the first weed biopanese knotweed, Himalayan balsam and others.



Project FORIS: With UNEP and partners established National IAS Coordination Units, developed national invasive species strategies and action plans, IAS communication strategies, IAS training modules, developed and implemented IAS

Project ISC-ACP: In ACP regions, 177 stakeholders representing 59 countries trained in using the ISC

best management practices, etc.

Project ISC: Authoritative data to support RA and prioritization of IAS and pathways collated and made available Open Access through the ISC. >700,000 users over the past year

Project IPSN: Leading botanical gardens and arboreta to information on invasives and their impacts on biodiversity; linking BGCI's PlantSearch database to the ISC

Project MLIEA: Our surveys and maps are informing stakeholders how impacts of IAS on biodiversity negatively affect livelihoods in poor rural communities in Zambia, Tanzania, Uganda and Kenya



Working in South East Asia to develop national and regional strategic

plans and instruments to mitigate the effects of invasive species

IAS are threatening forest habitats in SE Asia. They also indirectly affect the livelihoods of millions of people who depend on forests for food, commodities and energy. Implemented by UNEP and funded by the GEF, CABI and partners, developed a project aimed at conserving globally important forests in the region. Countries in the region recognize the need to implement Article 8 (h) of the CBD to mitigate the threats posed by invasive alien species and this project aimed to enhance the capacity of Cambodia, Indonesia, Philippines and Vietnam to manage their IAS.

The project strengthened existing national frameworks to prevent and manage IAS. CABI achieved this by establishing national policy and institutional frameworks, developing mechanisms for risk analysis, early detection and rapid response mechanisms and cost-recovery systems to finance IAS management activities.

Building capacity within the region was an important component of the project so CABI worked with countries to increase regional co-operation and create awareness of the threats posed by IAS. We developed and implemented national training programmes, created a standardized communication strategy with national activities and regional targets and increased awareness on IAS at the regional and national levels. We created a documentary on Acacia nilotica in Baluran national park - supported by the Asian Broadcasting Union – which aired on over 25 TV channels, and was watched by over 250 million people in over 15



countries.

We also initiated pilot scale, model management programmes against target IAS such as gum arabic tree and merremia (Indonesia); catclaw mimoant sensitive plant (Vietnam).



ukaid

from the British people







IMPRINT

Gaenor Cowles, Carol Ellison Julien Lamontagne-Godwin, Gareth Richards.

CABI Head Office, Nosworthy Way, Wallingford, Oxfordshire. OX10 8DE. UK.

T: +44 (0) 1491 832111

E: corporate@cabi.org

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spected, subject to national legislation and relevant inter-

national obligations, and fully integrated and reflected in

the implementation of the Convention with the full and

Target 17: By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity

priate, and reporting systems.

socio economic conditions.

mote sustainable use

biodiversity and pro-

se impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.

Target 8: By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to

Target 10: By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.

ty by safeguarding eco-systems, species and genetic diversity

Target 11: By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.

Target 12: By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.

Target 13: By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.

Enhance the benefits to all from biodiversity and ecosystem services

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, indigenous and local communities, and the poor and vulnerable.

Target 15: By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.

Target 16: By 2015, the Nagoya Protocol on Access to Geetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation.

strategy and action plan. **Target 18:** By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversi ty, and their customary use of biological resources, are re-

> effective participation of indigenous and local communities, at all relevant levels. Target 19: By 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are im-

proved, widely shared and transferred, and applied. Target 20: By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources, and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization, should increase substantially from the current levels. This target will be subject to changes contingent to resource needs assess

ments to be developed and reported by Parties.

AICHI BIODIVERSITY TARGETS STRATEGIC GOALS



Target 1: By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve Target 2: By 2020, at the latest, biodiversity values have

Data on invasive species causing extinction

cies Act (ESA), are affected by invasive species.

molluscs, pathogens, algae, etc.

Invasive species, along with habitat loss, overexploitation and pollution

are a major cause of species extinction. Currently there is little easily ac-

cessible knowledge on the role of invasive species and their management

example, little is known about how species that are listed, or identified as

candidates for listing as endangered species under the Endangered Spe-

Working with the US Department of Agriculture's Animal and Plant He-

around the globe, our specialist content editors have so far produced and

published over 300 new datasheets in the ISC on invasive species that are

detrimental to threatened species in the USA. Most of these invasive spe-

cies are plants but arthropods make up the second largest group. We have

also included a significant number of freshwater fishes, birds, mammals,

other vertebrates and a number of other groups are represented such as

The team has indexed and uploaded more than

to the Compendium, which can be found using

links from related invasive species datasheets.

rest & Kim Starr-2009 - CC BY 3.0)

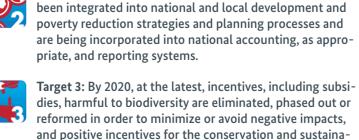
the ISC's basic search interface or by clicking on

(Image: Juncus effusus, invasive in Hawaii. ©Fo-

200 US Fish and Wildlife Service Recovery Plans

alth Inspection Service (USDA APHIS) and expert contributors from

in order to prevent or slow the decline of species. Taking the USA as an



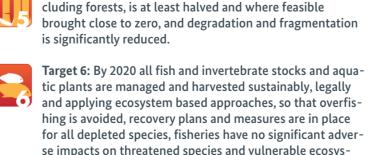
ble use of biodiversity are developed and applied, consis-

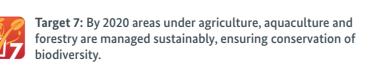
tent and in harmony with the Convention and other rele-

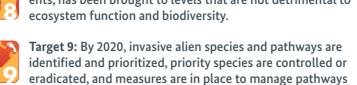
vant international obligations, taking into account national

Target 4: By 2020, at the latest, Governments, business and takeholders at all levels have taken steps to achieve or ve implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.

Target 5: By 2020, the rate of loss of all natural habitats, indirect pressures on







to prevent their introduction and establishment.