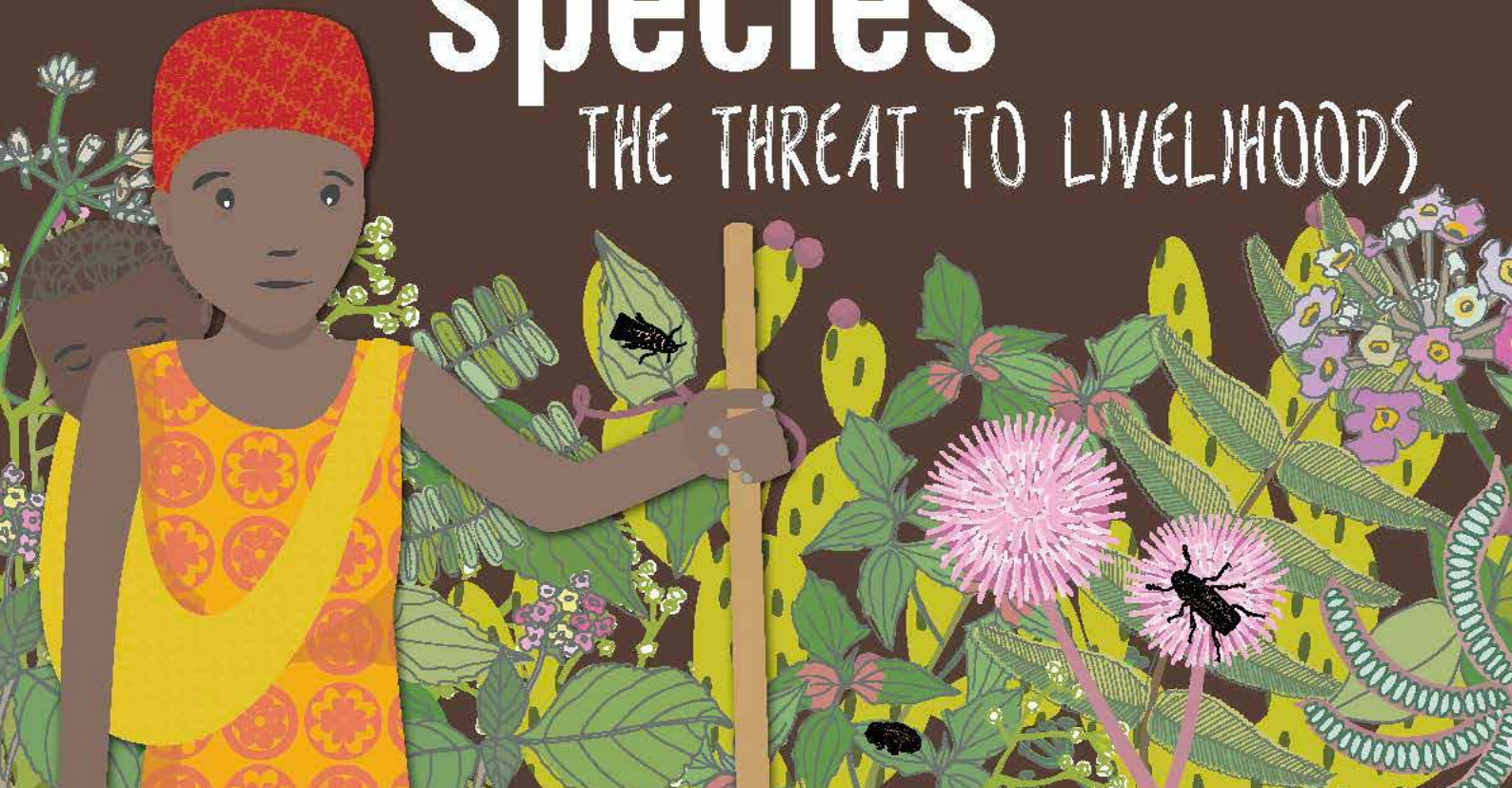


invasive species



THE THREAT TO LIVELIHOODS



THE ESTIMATED DAMAGE FROM INVASIVE NON-NATIVE
SPECIES WORLDWIDE IS MORE THAN **\$1.4 TRILLION**

(Pimentel *et al.*, 2001)

Around the world, millions of people living in rural communities face similar problems with weeds, insects, plant diseases and animals, which are **out of control** and threatening their livelihoods.



I am Peace. This year I lost a third of my livestock and half of my harvest to weeds which are taking over my land. I spend all my time trying to pull them out and stop my animals from eating them.

This is my story...

PEACE'S STORY



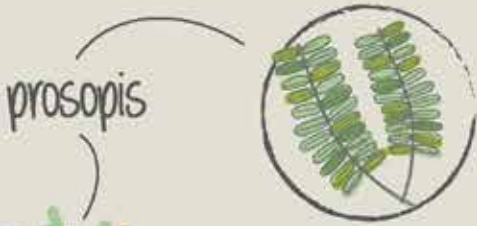
I am Assistant Head of my village and live here with my children and husband. We have a small plot of land where we grow crops and rear animals to sell at market.



SPECIES SUCH AS PARTHENIUM HAVE BEEN KNOWN TO **REDUCE CROP YIELD BY UP TO 97%** CREATING A 'GREEN DESERT.' (TAMADO ET AL 2002)



parthenium



prosopis

A STUDY IN SOUTH AFRICA SHOWED THAT ABOUT **71% OF NATURAL GRAZING** IN THE COUNTRY WOULD BE LOST IF INTRODUCED WEEDS WERE NOT MANAGED. THE REST OF AFRICA COULD BE AFFECTED IN A SIMILAR WAY. (VAN WILGEN ET AL 2008)

chromolaena



Since the weeds came we have noticed that our land is drier and water has become more limited.



LIVESTOCK ACCOUNTS FOR **30% OF AFRICA'S AGRICULTURAL GDP** AND IS A VITAL SOURCE OF NUTRITION FOR THOSE LIVING IN RURAL COMMUNITIES. (WORLD BANK 2009)

The plants our animals graze on are being choked by these weeds. They try and eat the weeds instead but some of them are poisonous or have thorns. Our animals are dying.



opuntia



Our environment used to provide us with materials to build with, food for our animals and traditional medicines. But now the weeds mean we can't get to them or they have smothered the plants we need.

INVASIVE SPECIES HAVE BEEN IDENTIFIED AS THE **SECOND GREATEST THREAT TO BIODIVERSITY** AFTER HABITAT LOSS. (VITOUSEK ET AL 1996)



I need all the help I can get to keep the weeds at bay, so I have to get my children and my friends to help, otherwise my crops are smothered. What plants remain are being destroyed by the insects!

larger grain borer



YIELD LOSSES DUE TO INVASIVE SPECIES IN WEST AND EAST AFRICA ARE AT **80% WHEN UNMANAGED.** (OERKE 2006)



Because we have less to sell now, it's harder to send our children to school and live well.

The weeds are forcing our friends to abandon their land and move. But land is limited and it is causing conflict between people.



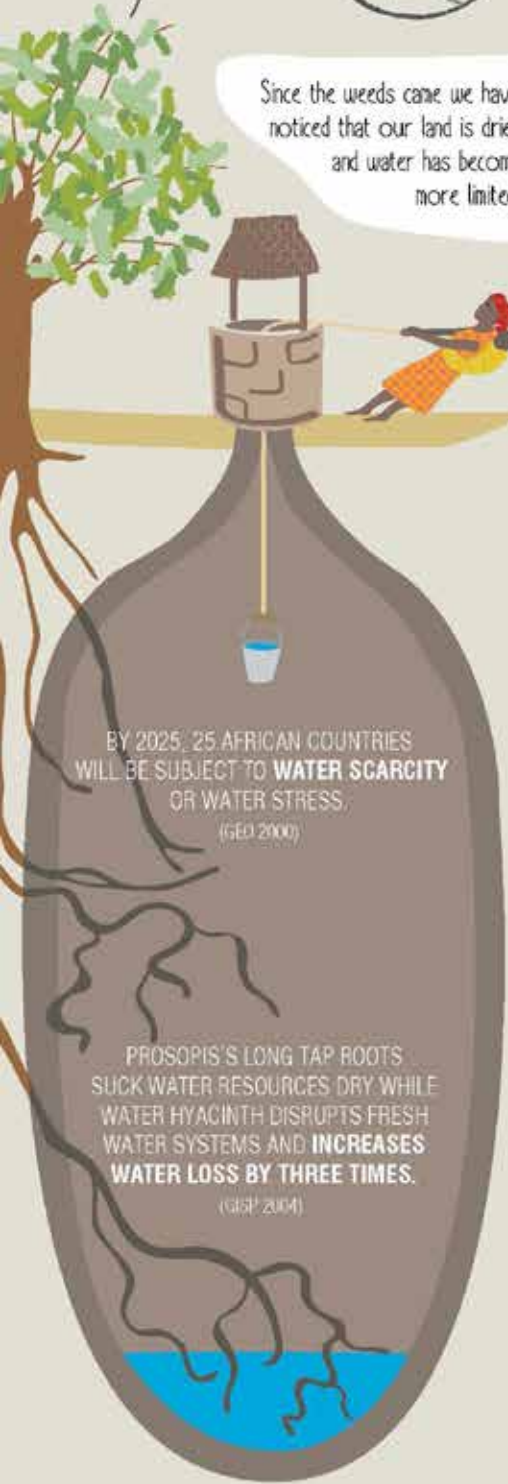
Our animals and village members are getting sick from these plants – some are poisonous and some cause skin allergies and asthma.



SOME INVASIVE PLANTS HAVE BEEN FOUND TO **REDUCE NATIVE PLANT RICHNESS BY UP TO 90%.** (REJMANEK 2014)



We are not alone in our suffering, many people across the globe have similar problems to ours from invasive weeds and pests.



BY 2025, 25 AFRICAN COUNTRIES WILL BE SUBJECT TO **WATER SCARCITY** OR WATER STRESS. (GEO 2000)

PROSOPIS'S LONG TAP ROOTS SUCK WATER RESOURCES DRY WHILE WATER HYACINTH DISRUPTS FRESH WATER SYSTEMS AND **INCREASES WATER LOSS BY THREE TIMES.** (GIST 2004)

rural communities **around the world** are affected by invasive plants, insects, and animals



Maize Lethal Necrosis Disease

Africa and Asia

Maize Lethal Necrosis Disease is caused by a co-infection of maize by Maize Chlorotic Mottle Virus and Sugarcane Mosaic Virus. Farmers in Kenya have reported extensive or complete crop loss. Since maize is a staple food crop in countries like Kenya, the disease is having a severe effect on food security in the area.



Golden Apple Snail

Asia

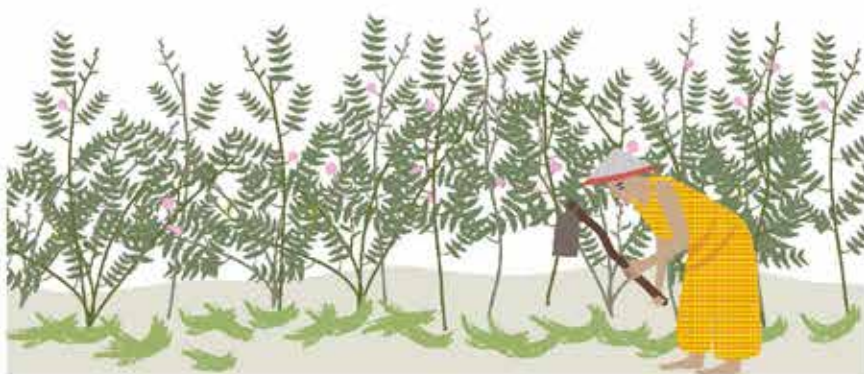
This snail is a freshwater snail native to parts of Argentina and Uruguay. Since being introduced to Asia in around 1980 as a food resource, it has spread rapidly through water bodies such as canals and rivers, especially during floods. It feeds on aquatic plants and has been shown to destroy vital crops such as rice in South-East Asia.



Coffee Berry Borer

Global

This beetle is the world's most serious coffee pest. It is thought to have spread through coffee seed sold around the world and very few coffee-producing countries are now free of the borer. Coffee Berry Borer has been known to attack every single berry in a heavy infestation.



Giant Sensitive Plant

Africa, Asia and Australia

This is a small prickly shrub that infests wetlands, flood plains and rice fields. It transforms landscapes into dense thorny thickets and affects native biodiversity. It is regarded as one of the worst invasive weeds in tropical Africa, Asia and Australia.



Maize Lethal Necrosis Disease

We grow maize to feed our family and sell. The disease has killed most of my crops and left the rest unharvestable. The crops are inedible and the seeds cannot be used. I have very little food for my family and nothing to take to market.

Faith Oguya, Kenya

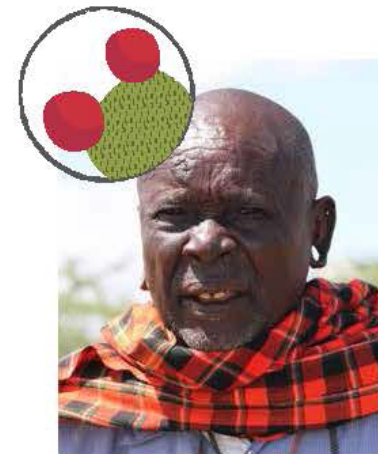


Coffee Berry Borer

Hypothenemus hampei

Coffee Berry Borer has eaten almost all of our crops; we are not able to sell what is left because the quality of the berries is too poor. I have nothing to sell and no way to support my family.

Iketut Windia, Indonesia



Pest Pear

Opuntia stricta

This used to be a very beautiful environment before Pest Pear colonised our grazing fields. This is a major problem, since it has begun claiming livestock and land and forcing us to move from our homes.

Parsito Kitongo, Kenya



Larger Grain Borer

Prostephanus truncatus

The pests are destroying both my crops in the field and what I have stored after harvesting. I have not enough to sell and barely enough to take home and feed my family.

Faith Wanyama, Uganda



Tomato Leaf Miner

Tuta absoluta

We have lost all of our tomatoes to Tomato Leaf Miner and because of it I have had to stop growing tomatoes. There is no way to stop the insects from eating the tomato plants.

Ato Zelalem, Ethiopia



Golden Apple Snail

Pomacea canaliculata

Golden Apple Snails have infested the paddy fields and are destroying the rice crop. I have noticed that we are harvesting less crops and the pesticides we use to try and control the snails are very expensive and damaging to my health.

Đỗ Phạm Ngô, Vietnam



Giant Sensitive Plant

Mimosa diplotricha

The weed has taken over the wetlands and paddy fields, it's harder to grow crops and it's clogging up the water courses. None of the native plants can grow and it's very expensive to try to control the weed.

U Thein Tun, Myanmar



Mesquite

Prosopis pallida

Prosopis is taking over our land and sucking the water from the soil. Our livestock often eat it because there is nothing else and many of them have died because of it. It is impossible to pull out because it grows so densely and is covered in thorns.

James Kimplimo, Kenya

tackling the problem: CABI's action plan



Invasive species are introduced to countries in many different ways and establish and spread quickly given the right conditions as you can see below. But with the right interventions they can be managed and livelihoods can be protected.

INVASIVE FISH CAN BE INTRODUCED BY PET SHOPS

NON-NATIVE SPECIES INVADE OUR SEAS

IF EXPOSED, FISHING EQUIPMENT GETS CONTAMINATED BY INVASIVE SPECIES

INVASIVE SPECIES CAN ATTACH THEMSELVES TO THE HULLS OF SHIPS

SHIPS TRANSPORT INVASIVE SPECIES IN THEIR BALLAST WATER

INVASIVE SPECIES GET TRANSPORTED IN THE LUGGAGE HOLDS OF PLANES

TOURIST LUGGAGE CAN CONTAIN INVASIVE SPECIES

INVASIVES SPREAD BY THE WHEELS OF MANY FORMS OF TRANSPORT

INVASIVE SPECIES INFECT RIVERS AND LAKES. THE WATER SYSTEMS THEN TRANSPORT THEM TO OTHER AREAS

INVASIVE PLANTS ATTACH THEMSELVES TO LIVESTOCK AND CAN BE MOVED OVER GREAT DISTANCES

MANY ORNAMENTAL PLANTS SOLD BY NURSERIES ARE INVASIVE

PREVENTION

- Raising awareness by informing local people of the different methods of preventing the arrival and spread of invasive species.
- Increasing capacity and provide tools for prevention agencies so they can identify and stop invasive species at their borders.
- Supporting horizon scanning and risk assessment activities so countries can judge threats and ensure plans are in place to intercept priority species.
- Supporting development of national frameworks for managing the threat of invasive species.

EARLY DETECTION AND ERADICATION

- Supporting agencies responsible for early detection and eradication of invasive species, including interaction with external experts so we can tackle pests together before they become established.

MITIGATION

- Providing expert consultancies in managing invasive species.
- Advising on sustainable control options such as Classical Biological Control (CBC) and Integrated Pest Management (IPM) and undertaking research on these as needed.
- Implementation planning for selected control options and impact assessment.
- Monitoring and Evaluation to improve impact of management interventions and associated value for money.

Invasive species are a global problem; threatening biodiversity, causing economic losses and impacting on human health and livelihoods.

CABI has been working on invasive species for over 100 years, and we research and implement workable approaches to tackle the biggest threats.

Get involved and help us tackle invasive species globally.

Find out more about our work: www.cabi.org/invasives

and join our campaign to stop invasive species: www.invasive-species.org

Contact us: Sean Murphy (s.murphy@cabi.org) CABI, Bakeham Lane, Egham, Surrey TW20 9TY



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