

Ethiopia

Integrated Pest Management Innovation Lab country profile



Map courtesy CIA World Factbook

Population: 96 M

GDP per capita: \$1,300

Feed the Future country? Yes

Involvement in this country since: 2004

Challenges:

- Low crop yield
- Environmental degradation
- Threats from invasive species

Related project name: Parthenium Global Theme - Abating Parthenium weed damage in eastern Africa using integrated cultural and biological measures

Project overview: IPM Innovation Lab work in Ethiopia focuses on controlling an invasive weed that threatens human and livestock health, food security, and biodiversity, and on building host-country institutional capacity in the process.

Accomplishments:

1. **Biological control agents released:** In July 2014, the bioagent *Zygodromma bicolorata* was released to control the invasive species *Parthenium hysterophorus*.
2. **Rearing bioagents:** Populations of leaf-feeding beetles (*Zygodromma bicolorata*) and stem-boring weevils (*Listronotus setosipennis*) were reared and increased under quarantine.
3. **Establishment of quarantine facility and breeding cages:** This project established the first official quarantine facility and weed biological control program and research facility in Ethiopia. It is now serving as a training center on the management of quarantine facilities and biological control, with 75 students and researchers already trained.
4. **Conducted Workshops:** The project held several workshops on Parthenium management for researchers and extension agents.
5. **Long-term training:** The project supported seven M.S.-seeking graduate students, three of them female, and trained five Ethiopians in South Africa in the rearing and testing of biological control agents and quarantine procedures.
6. **Awareness posters in multiple languages:** Posters to create awareness of the health impact of Parthenium were published in English, Amharic, Oromiffa, Tigriga, and Somali.



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African researchers and growers examine a stem-boring weevil (left). The weevil will be supplementing the efforts of a leaf-eating beetle, which was released in Ethiopia (right) to fight the invasive weed Parthenium.

Releasing a beetle to biologically control destructive, invasive weed

A devastating invasive weed known as parthenium is making an unwelcome advance in countries around the world. In East Africa, it has been wreaking havoc—reducing crop yields, adversely affecting livestock production by taking over pastures and tainting the taste of cow’s milk, damaging human health, and impinging on biodiversity. The weed, a native of Mexico and Central America, stowed away on shipments of grain that were part of food aid to Ethiopia in the 1970s. With no native enemies in Africa, it has spread widely and has now become a huge problem. In the Ethiopian language of Oromiffa, it is called “faramsissa,” meaning, “sign your land away.” Researchers and scientists from the IPM Innovation Lab and its partner institutions determined that the most cost-effective, environmentally friendly way to control the weed would be to release a biological control agent – or “bioagent.” In this case, bioagent refers to a pea-sized beetle called *Zygogramma bicolorata* that feeds only on parthenium. The release is expected to control the weed, as it has done in South Africa and Australia. As a second step, scientists are poised to release a stem-boring weevil.

As part of this work, the Innovation Lab established a quarantine facility in Ethiopia 2007— the only one of its kind in eastern Africa. This facility now allows local scientists to test insects that can then be used in biocontrol efforts.

Relevant websites

<http://www.oired.vt.edu/ipmcrsp/our-work/projects/parthenium/>

Local Implementers

Amhara Agricultural Research Institute (ARARI)
Ethiopian Institute of Agricultural Research (EIAR)
Haramaya University
Oromiya Bureau of Agriculture
Tigray Institute of Agricultural Research

Regions/provinces

Oromiya Regional State, Tigray Regional State

Principal Investigator:

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