



Optimisation of Pesticidal-plants: Technology Innovation, Outreach & Networks (OPTIONS)

Consortium

Implementing partners:

- Natural Resources Institute (NRI) - University of Greenwich, *UK (Project Co-ordinator)*
- Royal Botanic Gardens, *UK*
- University of Zimbabwe, *Zimbabwe*
- Mzuzu University, *Malawi*
- Sokoine University of Agriculture, *Tanzania*
- World Agroforestry Centre (ICRAF), *Kenya*
- Sustainable Global Gardens, *UK*
- National Museums of Kenya, *Kenya*

Associated partners:

- Centre For International Forestry Research (CIFOR), *Indonesia*
- Ministry of Agriculture, Irrigation and Water Development, *Malawi*
- Egerton University, *Kenya*
- Community Initiatives for Rural Development, *Kenya*
- Community Sustainable Development Empowerment Programme (COSDEP), *Kenya*
- Kenya Organic Agriculture Network, *Kenya*
- Indigenous Knowledge Centre (IKC), *Malawi*
- Environment Africa, *Zimbabwe*
- Pyrethrum Growers Association, *Kenya*



Development challenge

Food security is a major challenge in Africa, with a high demand for sustainable produced food. Crop pest damage is a significant challenge to food and nutritional security, mainly affecting poor farmers and low-input agriculture in Africa.

80% of food is produced by small holders farming (< 2ha) marginal and degraded land with little mechanisation or adequate inputs (Sibhatu et al.,2015). Smallholders frequently

Budget

Total budget: €1,174,300.39
EU contribution: €993,525.39

Duration

January 2014 – June 2017

Countries of intervention



overlook pest control due to its prohibitive financial cost, but higher production rates depend on pest management. Current practices rely on agrochemical inputs, adversely affecting the user and consumer health and ecosystem services like pollinators and natural pest regulation.

Pesticidal plants are a viable and widely used alternative approach to pest control. However, accurate knowledge is needed to optimise the organic intervention of pesticidal plants so farmers can benefit from its natural and environmentally friendly pest control properties.



Project approach

The OPTIONS project used a collaborative multidisciplinary and multi-institutional approaches that targeted researchers, post graduate students, scientists, farmers, nursery growers, and related staff. The project strategy was built on a strong practical hands-on implementation and participation of all target groups and final beneficiaries, and aiming to self-sufficient and commercialisation of produced pesticides, together with inter-network collaboration.

This approach was implemented through the scientific and technical trainings on how to exploit pesticidal plants and optimise their use for poor farmers, generate a new income and scale the production to national level.



Project results

Improved knowledge on scientific, technological and application capacity of agricultural stakeholders to exploit pesticidal plants and optimise their use for smallholders was strengthened.



>20

Local training workshops have been held in Kenya, Tanzania, Malawi, and Zimbabwe.



>4,000

Farmers were trained in the optimal use of pesticidal plants (40% of whom were female, particularly in legume cropping systems).



>90

Scientists and nursery growers (30% female) were trained in the propagation of 4 indigenous species, with additional training and knowledge transfer on other effective species such as Tephrosia.



>90

Graduate students and scientists were trained in scientific techniques for validating biological activity as well as pesticidal plant propagation and use.



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Policy papers published in Food Security Journal, 6, 369-384, and Outlooks on Pest Management.



Farmers' knowledge and scientific evidence on pesticidal plants (<http://projects.nri.org/options>) and detailed information on



Handbook on Pesticidal Plants. World Agroforestry Centre (ICRAF), Nairobi, Kenya (<http://projects.nri.org/options/images/handbook.pdf>).



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pesticidal plant species common in the region (<http://projects.nri.org/options/background/plants-database>).

