

The SANParks *Warburgia salutaris* Conservation Programme: Interdisciplinary initiatives addressing extinction concerns.

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WHAT IS A *WARBURGIA*?

Family: Canellaceae (Cinnamon Family)

Common names: pepper-bark tree (Eng.); peperbasboom (Afr.); Isibhaha (Zulu); manaka (Venda); shibaha (Tsonga)

The genus *Warburgia* was named after Dr Otto Warburg, 1859-1938, who was born in Hamburg

Salutaris in Latin means healthful.

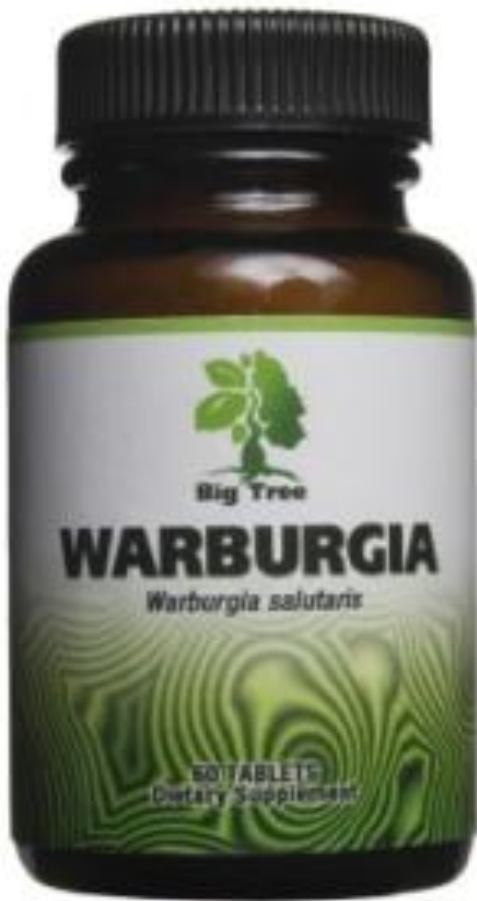
Isibaha is an old name in the history of Africa, and is thought to be based on an Arabian word which dates back to the days when the Arabs traded with Africa.



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Warburgia salutaris – what does it do?



- It is a first-rate treatment for headaches, common cold and influenza,
- Particularly effective for healing conditions of the respiratory system,
- Coughs, chest congestion (being a superb expectorant) and bronchial infections / bronchitis.
- It is also very effective for clearing the sinuses.
- All kinds of fungal, bacterial (including *Escherichia coli*), parasitic and protozoal infections.

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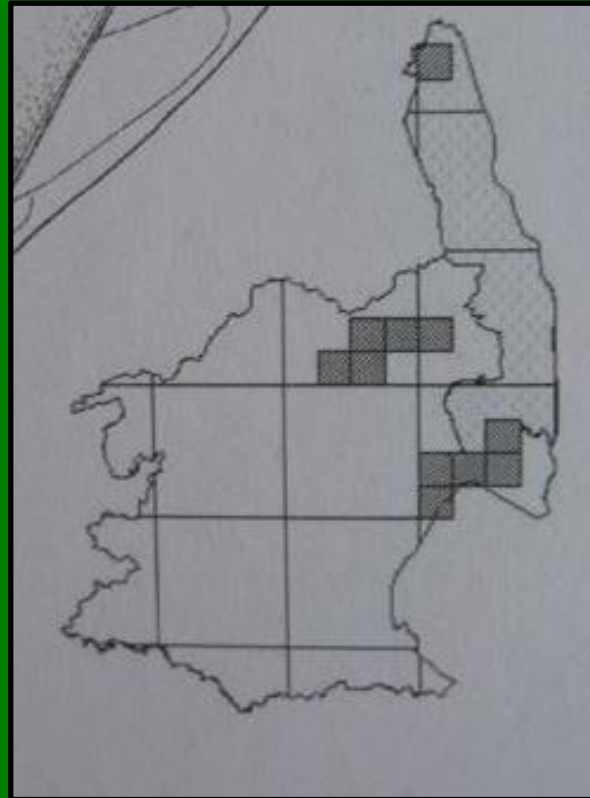

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Warburgia salutaris – how threatened is it?

- CITES – Endangered
- Tree of the Year in 1996



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Illegal Bark Harvesting in KNP



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Warburgia Conservation Programme Objective (2008 TO DATE)

To promote and facilitate the conservation of *Warburgia salutaris* in the Kruger National Park and the surrounding areas for the benefit of current and future generations

Objective 1. To promote the sustainable use of *Warburgia salutaris* including the promotion of alternative sources of *W. salutaris* tissue for the benefit of multiple stakeholders

Objective 1.1: To enhance the availability of *Warburgia salutaris* tissue to the local market

Objective 1.1.1: To facilitate the availability of leaves for the local healers at a household scale

Objective 1.1.2: To facilitate the availability of nursery grown cuttings for the healers at a household scale

Objective 1.2: To enhance the availability of *Warburgia salutaris* tissue to the commercial market

Objective 1.2.1: To assist existing nurseries in the large scale propagation of *Warburgia salutaris*

Objective 1.2.2: To assist these nurseries in gaining access to the commercial market to sell the *Warburgia salutaris* tissue (trees and leaves)

Objective 1.3: To reduce the harvesting of bark of *Warburgia salutaris* by promoting the use of leaves as opposed to bark for the medicinal trade.

Objective 2: To reduce the local illegal harvesting of *Warburgia salutaris* from within the KNP

Objective 2.1: To temporarily employ field rangers to patrol the area year, in order to guide the development of the most cost efficient but effective strategy

Objective 2.2: To continue with detailed surveillance (CIS) via informers in the local communities

Objective 3: To monitor the *Warburgia salutaris* population in Kruger to be able to detect changes in it's status, in order to guide any management interventions

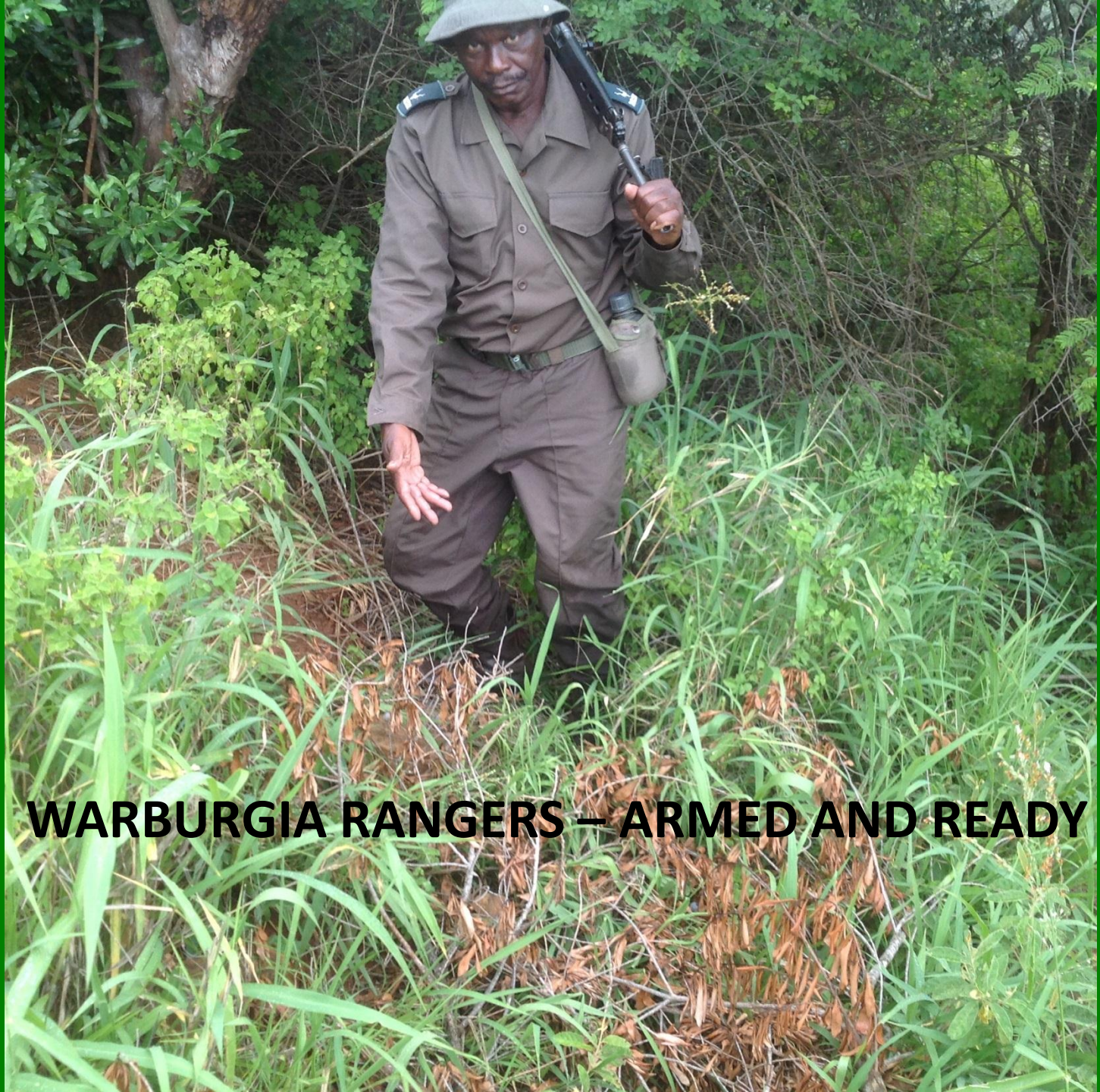
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Objective 3.1: To determine the current status of the *W. salutaris* population in KNP

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Objective 3.2: To detect changes over time in the status of the *W. salutaris* population in KNP

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WARBURGIA RANGERS – ARMED AND READY



DAILY MONITORING OF *WARBURGIA* POPULATIONS



DETECTING INCIDENTS OF POACHING

Distribution workshops



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Warburgia distribution



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Impact of the drought on *Warburgia*



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Habitat? - *Warburgia* surveys in Punda Maria area

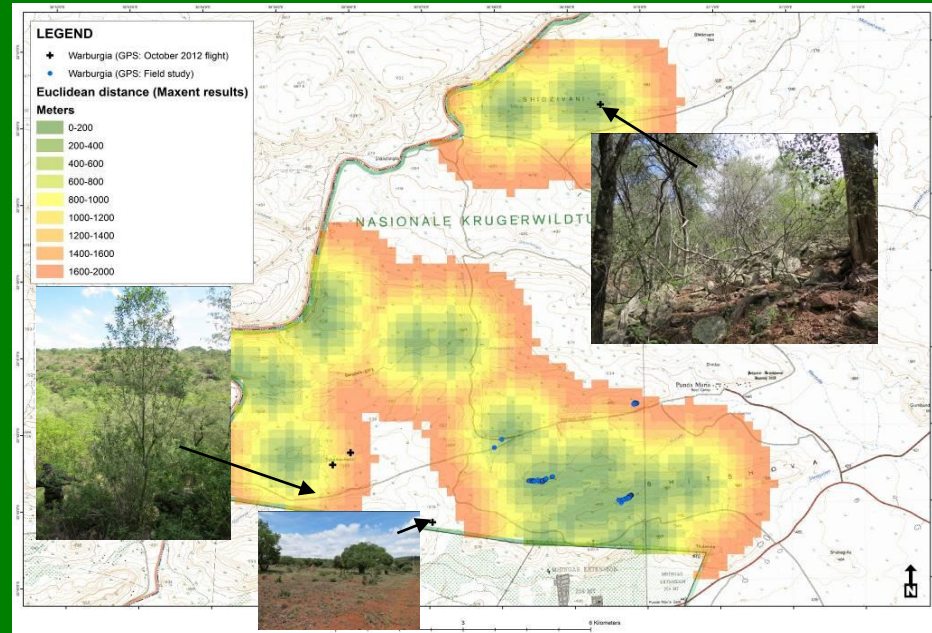
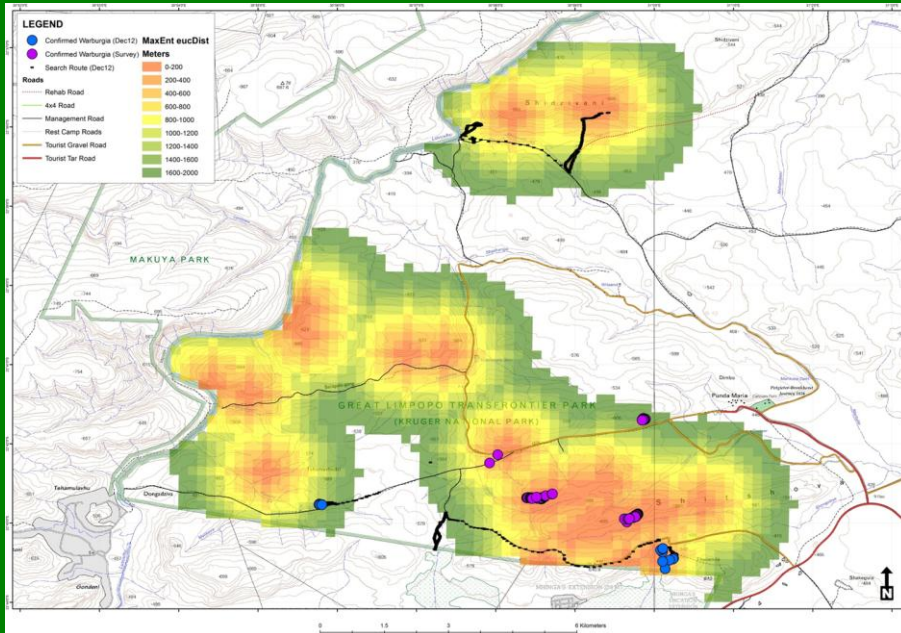


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Conservation/Horticultural Science

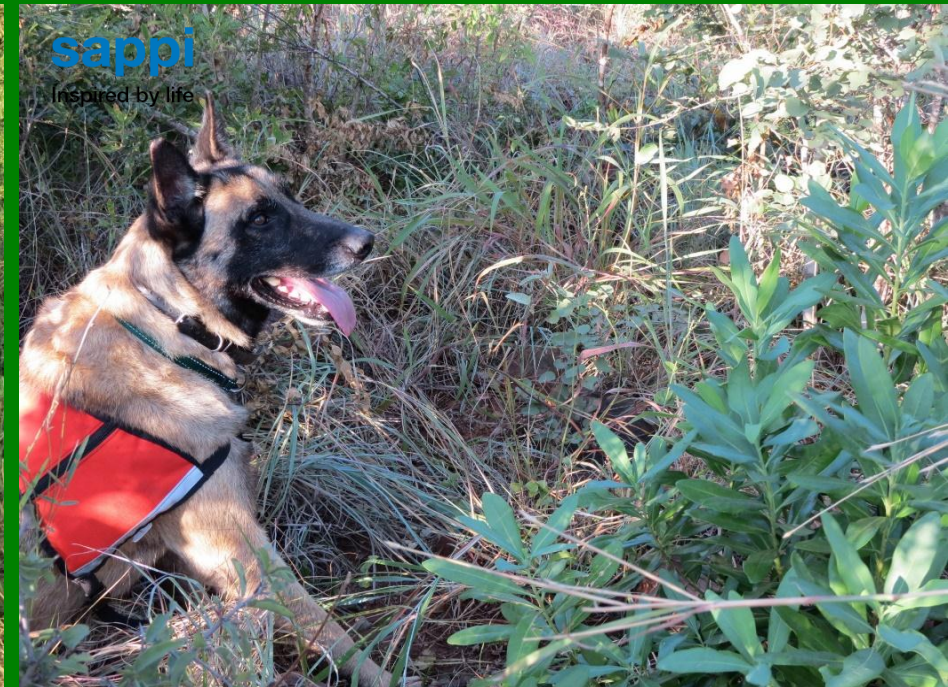
Habitat? - *Warburgia* surveys in Punda Maria area



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Habitat? – Novel approaches to finding as yet unknown populations



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Biggest challenge – finding healthy fruit and seed



fruit highly infested by maggots!

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Identified the causal agent and its population dynamics



Ceratitidis cosyra (marula fruit fly)



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Vegetative propagation

*Since no seeds were found in the wild populations – clonal propagation
bulk up trees for distribution*



Collecting material from a wild population

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Vegetative propagation

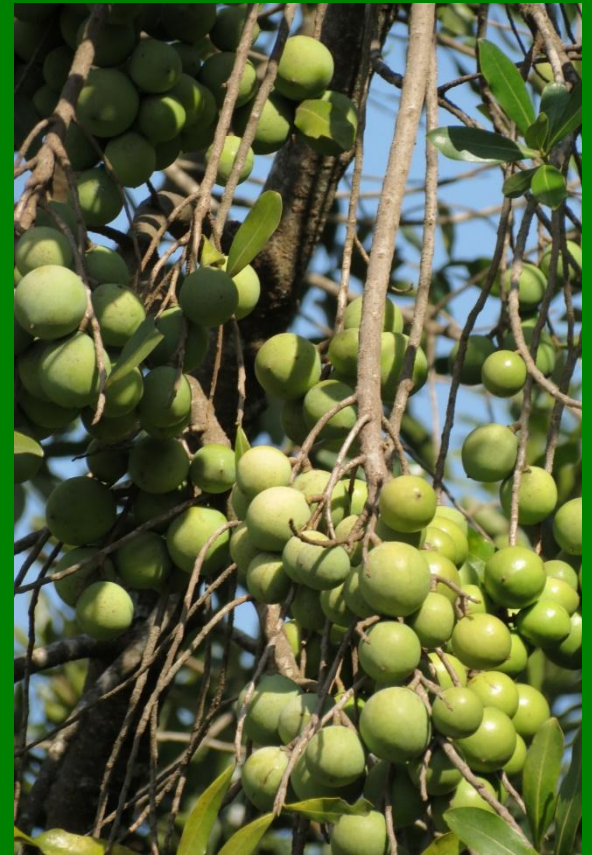
*Since no seeds were found in the wild populations – clonal propagation
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The seed windfall!! Eston - KZN

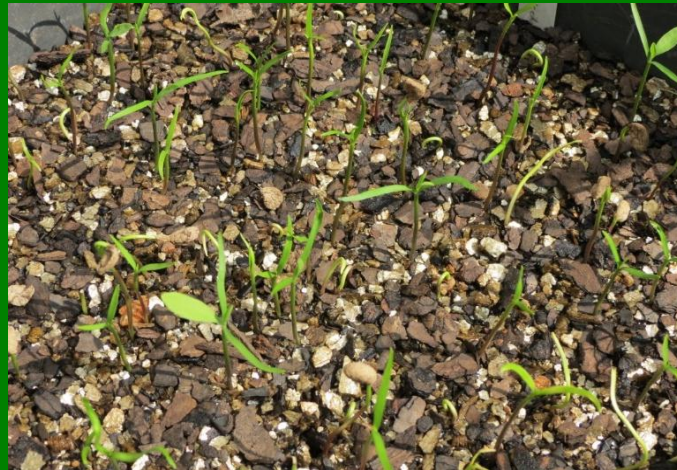


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The seed windfall!!

SANBI & ARC



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The seed windfall!!



Seedlings germinated by ARC and SANBI are planted out at Skukuza Indigenous Nursery

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The seed windfall!!



seed storage trials

- Can the seeds be stored for propagation on demand?
- Seeds are recalcitrant – i.e. cannot be stored indefinitely
- How long can seeds be stored?
- What are the best conditions to ensure viability?
- Ambient vs cold
- dry vs SG vs wet



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The seed windfall!!

1st time discovery of relatively healthy fruit in a newly-discovered population!!!!



24 seeds germinated!

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Genebanks – conserving the germplasm!

ARC
Nelspruit



SANBI
Nelspruit

in situ (within KNP) and ex situ genebanks (SANBI and ARC)

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Expanding the Programme – other species of concern? wild ginger (*Siphonochilus aethiopicus*)



- Build on successes
- Lessons learnt

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The next generation of *Warburgia* seedlings is on the way!



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THANK YOU!

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