MILLENNIUM SEED BANK PARTNERSHIP

Kew
ROYAL BOTANIC GARDENS

The challenge of providing quality seed for the GGW initiative

Dr. Moctar Sacande; Seed Conservation Department; Royal Botanic Gardens, Kew (UK)

m.sacande@kew.org

OUTLINE

1. KEW'S MILLENNIUN SEED BANK (MSB) PARTNERSHIP
2. MSB AND FOREST SEEDS
3. MSB AND GGW INITIATIVE

MAJOR THREATHS ON SPECIES

Humans are the main cause of extinction and the principle threat to species at risk of extinction

- Habitat loss and degradation are the leading threats
- Alien species introductions
- Over-exploitation: resource extraction for food and medicine threatens many species
- Pollution and disease
- Climate change induced by humans is increasingly recognised as one of the most serious threats

Over-exploitation

Slash and burn

Bush fire

Sand dune encroachment

THERE ARE SOLUTIONS
PLANT CONSERVATION STRATEGIES

- *In situ* Conservation

Conservation of species in their natural setting, allowing us to maintain natural systems and processes (e.g. National Parks, Natural Reserves, forests)

- *Ex situ* Conservation

Conservation of species removed from their natural setting, safe-guarding them outside their natural habitats; allowing restoration of degraded natural systems (e.g. Botanical Gardens, Seed Banks)

SEED-BASED SOLUTIONS

Seed Banking

- The storage of seeds is one of the most widespread and valuable *ex situ* approaches to species conservation;
- Seed banking has considerable advantages:
    - ease of storage for longer term, i.e. resilience
    - availability and handling in confined space,
    - relatively low labour demands,
    - capacity to maintain large samples (economically cost-effective)

THE VARIOUS STEPS OF SEED BANKING
COLLECTING and RECORDING

MILLENNIUM SEED BANK PARTNERSHIP Kew

SEED BANKING

Seed storage (at - 20°C / +4°C)

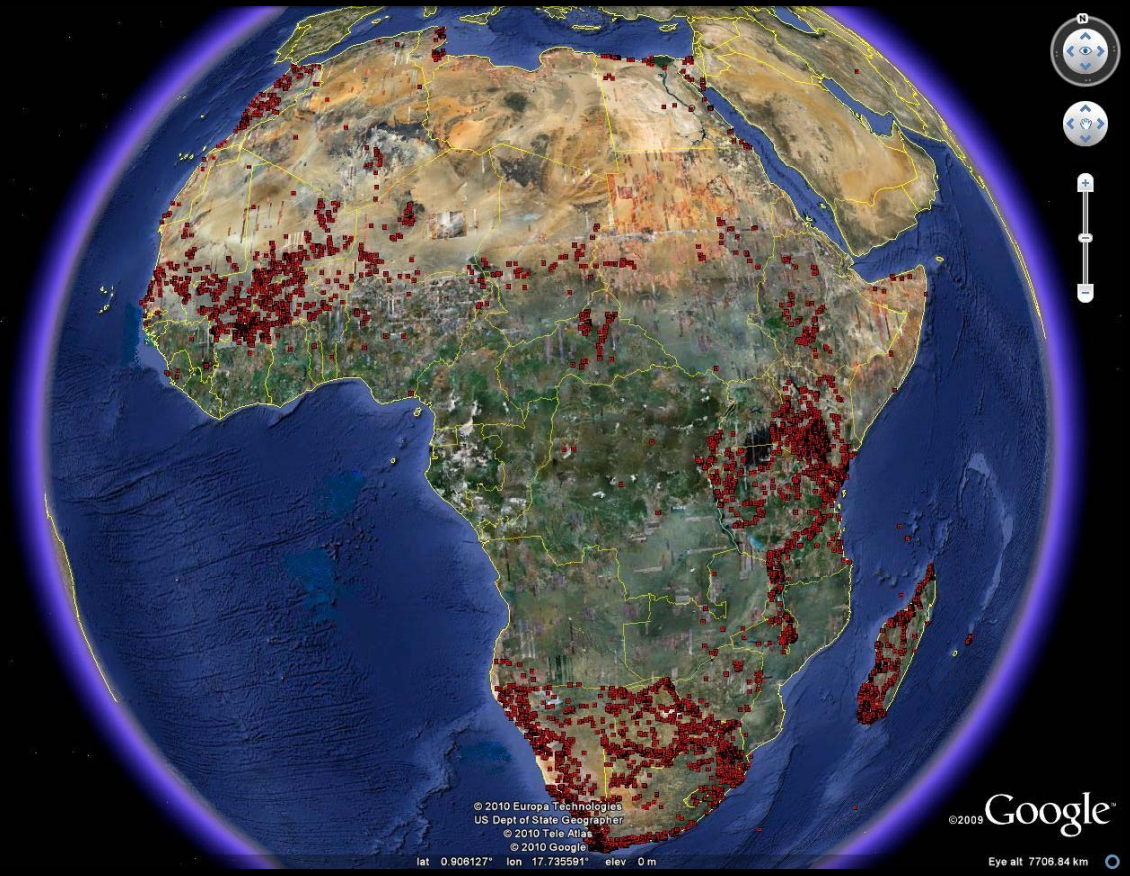
KEW'S
MILLENNIUN SEED BANK PARTNERSHIP
Phase 3 (>60 countries)

Target 1: Secure in safe storage 25% (75,000) of the world's plant species by 2020

Target 2: Enable the sustainable utilisation of plants, and the repair and re-establishment of damaged vegetation, for human adaptation, resilience and innovation.

Target 3: Secure a financial sustainability for the development of the partnership

AFRICA WILD SPECIES COLLECTIONS AT THE MSB



- Ca. **51,000** wild species in Africa

Forest Landscape Africa

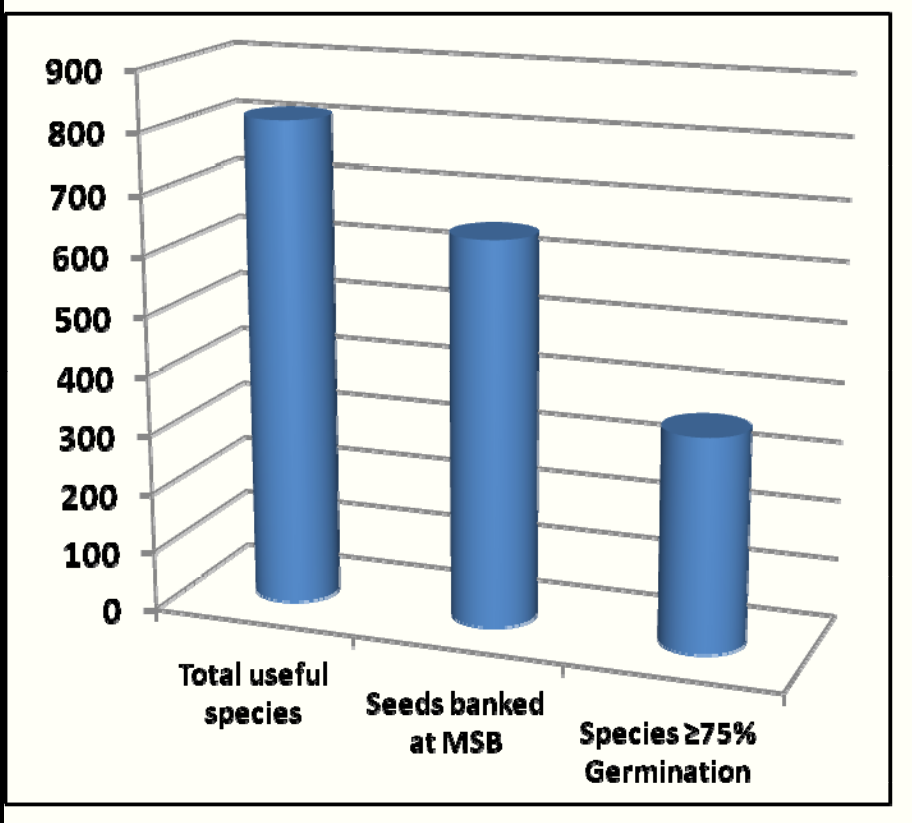
Current capacity and *per annum:*

- **40 tonnes of seeds of >500 tree/shrub species**
- **400 million seedlings (mostly exotics)**

UNIVERSITY OF COPENHAGEN
Forest & Landscape
Faculty of Life Sciences

PLANT-BASED SOLUTIONS

ENABLING USE THROUGH SEED RESEARCH



Value of the collections to Africa

- Over 1,000 species important to local communities

WORKING WITH LOCAL COMMUNITIES

Communities are at the centre of plant sustainable conservation

YAKOUTA, BURKINA

IFOLA, MALI

The Model for restoration success:

A- Consult with the Communities

B- Analyse and prioritise the needs for species

C- Deliver training on the job during the implementation

GIRL

MSB Community programme

Village tree nursery in Boamadumasi, **Ghana**, producing native chew-stick species (*Garcinia kola*)

Community tree nursery looked after by a women group in **Kenya**.

Native useful species production as seedlings in Sikasso nursery, **Mali**.

Community nursery producing seedlings of local species for a restoration project in Tera, **Niger**.

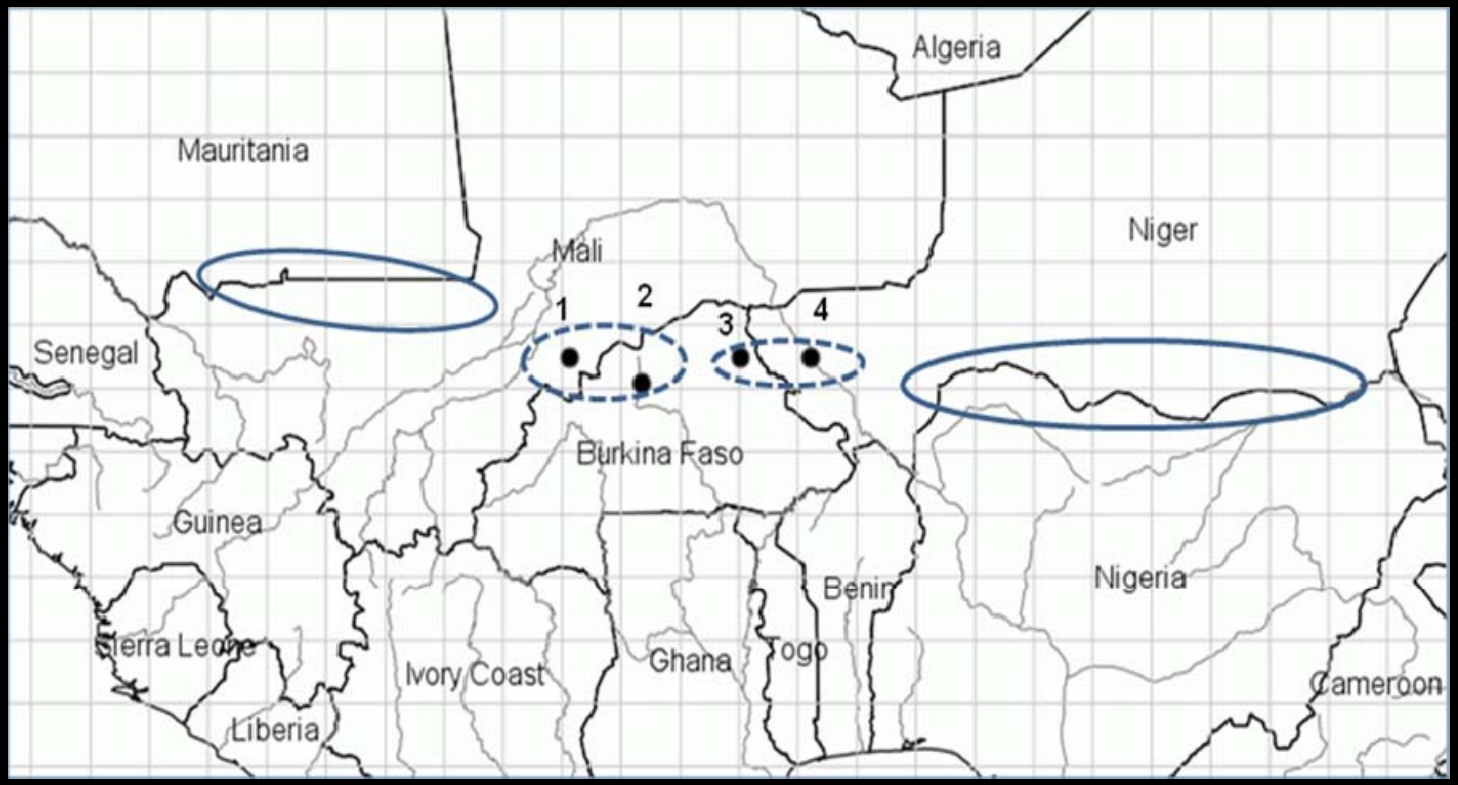
Collection of *Moringa oleifera* seeds, the 'miracle tree' with many properties, in **Burkina Faso (**CNSF),

Native seedling production of Gum Arabic *(Acacia senegal)* for the GGW in Dori, Burkina Faso .

Seed mobilisation capacity of the GGW

Country	Institution	Capacity (kg)	Species (trees & grasses)
Burkina	Centre National de Semences Forestieres (CNSF, BF - OECD)	3,000	50
Mali	Unite de Semences Forestieres (USF)	1,000	45
Niger	Centre National de Semences Forestieres (CNSF, Niger)	500	20
Senegal	Programme National de Semences Forestieres (ProNaSeF)	2,500	15
Kenya	National Tree Seed Centre (KEFRI-NTSC - OECD)	10,000	40
Ethiopia	Forestry Research Centre (EIAR- FRC)	8,000	20
Total	6	25,000	190

GGW restoration model



Beneficiary Communities in the trans-frontier Regions:
-**Bankass,** South-east Mali (**1** on the map),
-**Djibo,** North-west Burkina (**2**),
-**Dori,** North-east Burkina (**3**),
-**Tera,** West Niger (**4**).

MILLENNIUM SEED BANK PARTNERSHIP Kew

People

Livestock

SOIL PREPARATION AND PLANTING

Manual digging

Mechanised scarification

The achievements so far

Country	Region	2013			2014		
		Villages	Areas (ha)	Species	Villages	Areas (ha)	Species
Burkina	Dori/Djibo	11	200	15	40	900	20
Mali	Bankass	5	27	10	12	130	25
Niger	Tera	3	10	-	15	75	15
Total	3	19	237	25	67	1105	60

The right species in the right PLACE

Carapa procera, 2008

Anogeissus leiocarpus, 2008

Melia volkensii, 2009

Concluding remarks

1. Technically (seed provision/coordination) we have and we know what is needed to succeed the restoration component of GGW programme
2. Financially we need more support for and on behalf of the beneficiary communities
3. Do contribute to make it a SUCCESS