

# Disseminating underutilized species as a foundation of resilient farming system

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## Context of the Action

Considering plant diversity the foundation of agro-ecological principles, there is a need to preserve and share a large plant biodiversity and to continuously enrich genetic banks to design more diversified and resilient farming systems. Plant diversity can also contribute to improving the nutritional value of home gardens. Germplasm conservation and dissemination are challenging due to the high cost of seed bank maintenance, farmers limited access to good quality storage facilities, lack of knowledge and know-how of the key operators, and the lack of specific market demands for secondary crops and cover/relay crops.



## Objectives of the Action

- Preserve and maintain seed banks and biodiversity.
- Empower smallholder farmers on seed production.
- Disseminate knowledge and know-how on the use of underutilized species and cover/relay crops.
- Share under-utilized species with smallholder farmers and development practitioners.

## Genetic bank at the Conservation Agriculture Training Center

- Preserving and sharing over 50 species and over 330 cultivars of staple, cash crops and underutilized species.
- Providing training for smallholder farmers and development practitioners.
- Sharing seeds across the country: 9 tons of seeds will be shared with smallholder farmers and development practitioners in 2018.

- Legumes**
- 14 Arachis pinto
  - 15 Arachis repens
  - 16 Cajanus cajan
  - 17 Canavalia ensiformis
  - 18 Centrosema pascuorum
  - 19 Crotalaria juncea
  - 20 Crotalaria ochroleuca
  - 21 Crotalaria atrorubens
  - 22 Crotalaria zanzibarica
  - 23 Desmodium intortum
  - 24 Desmodium ovalifolium
  - 25 Dolichos lablab
  - 26 Glycine max
  - 27 Macroptilium bracteatum
  - 28 Macrotyloma adllare
  - 29 Mucuna pruriens
  - 30 Neonotonia wightii
  - 31 Pueraria phaseoloides
  - 32 Sesbania grandiflora
  - 33 Sesbania rostrata
  - 34 Stylosanthes guianensis
  - 35 Vigna radiata
  - 36 Vigna umbellata
  - 37 Vigna unguiculata

- Grasses**
- 1 Brachiaria brizantha
  - 2 Brachiaria decumbens
  - 3 Brachiaria humidicola
  - 4 Brachiaria ruziziensis
  - 5 Brachiaria mullato
  - 6 Brachiaria mutica
  - 7 Eleusine coracana
  - 8 Zea mays
  - 9 Panicum maximum
  - 10 Pennisetum typhoides
  - 11 Pennisetum purpureum
  - 12 Sorghum bicolor
  - 13 Tripsacum laxum

- Others**
- 38 Amaranthus cruentus
  - 39 Corchorus capsularis
  - 40 Hibiscus cannabinus
  - 41 Hibiscus sabdariffa
  - 42 Sesamum indicum
  - 43 Helianthus annuus

## Empowering smallholder farmers seed into the production of cover crops

In Battambang and Kampong Cham provinces, 12 farmers produce seeds of cover crops covering 34 ha with

- Crotalaria juncea*
- Crotalaria ochroleuca*
- Stylosanthes guianensis*
- Centrosema pascuorum*
- Sesbania sp.*
- Sorghum* and
- Pearl millet.*



## Sharing plant diversity, enhancing soil fertility and diversifying farming systems

Low availability of fodder sources during the dry season  
Tonle Sap lake region



## Around the Tonle Sap lake

In rainfed lowland of the Tonle Sap Lake Region in Cambodia, rice productivity is usually low.. Animal husbandry is one of the main components of the rice farming systems. In Banan District (Battambang 4 villages), farmers expect to establish 150 ha of cover crops after wet season rice with for most of them a collective management implementing large blocks.

Cover crops will be used for three main purposes: improvement of the soil fertility, use of cover crops as cattle feed and seed production of cover crops (*sunnhemp* and *Crotalaria ochroleuca* mainly).

There is huge opportunity to produce grains and protein in the dry season on the residual soil moisture transforming the land management in the dry season with a better integration of animal husbandry.

**February 2018**  
Sunnhemp, soil fertility improvement  
Broadcasted in Dec. 2017, growing on the residual soil moisture



**May 2017**



## In the uplands of Battambang

Cover crops are also shared with smallholder farmers in the uplands of Rattanak Mondoul (Battambang) with sowing of sunn hemp or other cover crops prior maize for example. Sunn hemp is then rolled down and maize direct seeded the same day into the mulch.



July 2018: Sunn hemp used as cover crop before maize sowing