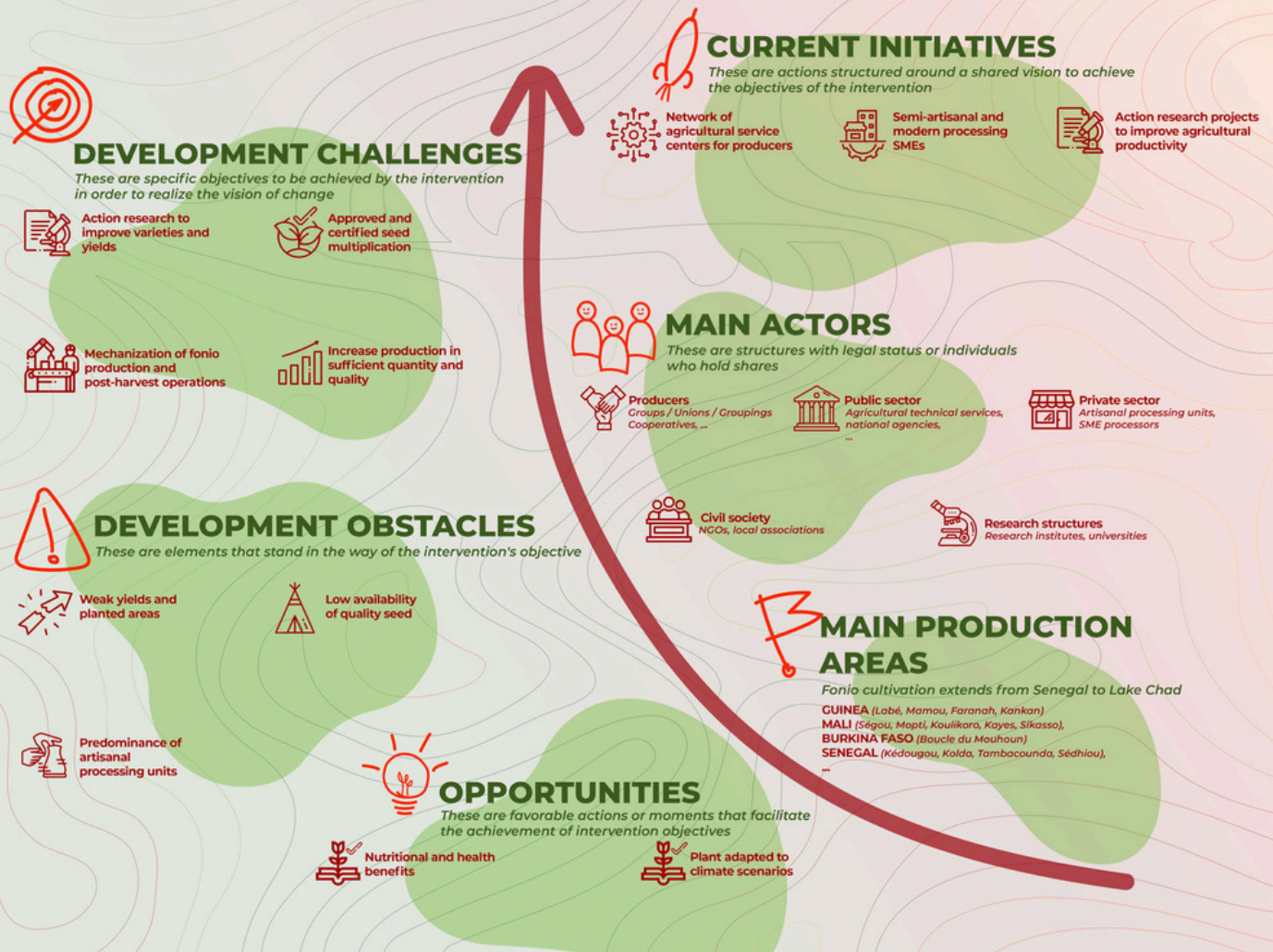
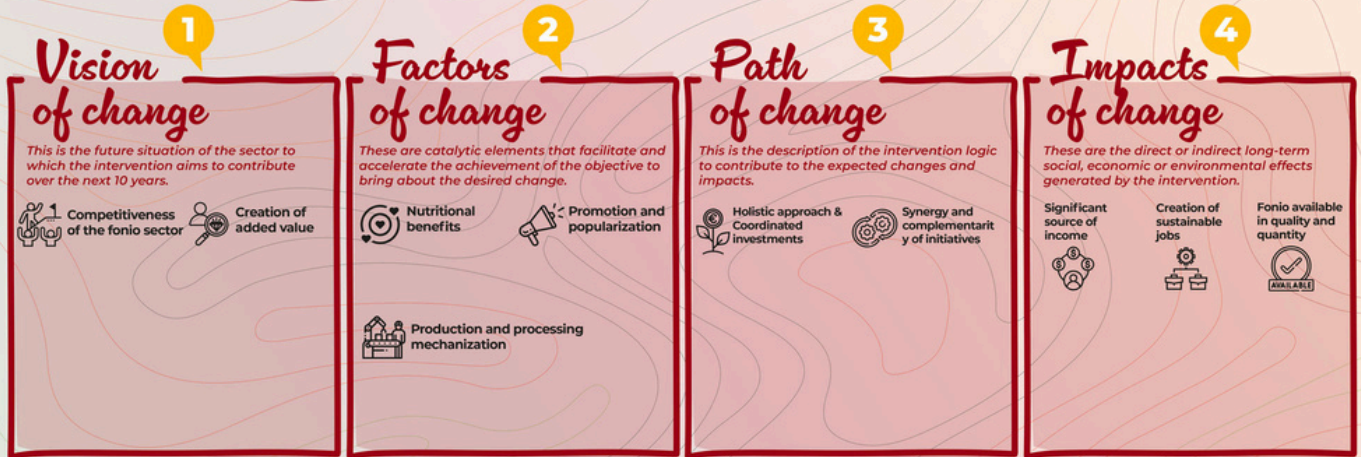




# Fonio: a local cereal adapted to global warming

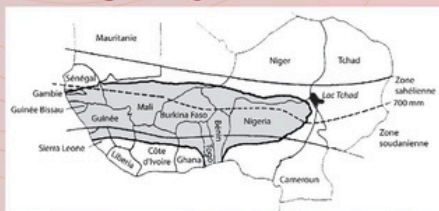




# FONIO

DIGITARIA EXILIS

## Key information



Zones de production du fonio (Cruz et al., 2011).

Countries	Production (Tons)	Surface area (hectares)
Guinea	530 000	638 000
Nigeria	83 300	170 000
Mali	40 500	60 000
Ivory Coast	20 500	15 000
Burkina Faso	10 200	14 000
Niger	6 000	10 200
Senegal	5 100	6 000
Benin	3 800	6 000
Guinea Bissau	600	800

Source : Cirad d'après les données FAOSTAT 2019 amonplies.

- **SCIENTIFIC NAME:** *Digitaria* sp.
- **GEOLOGICAL AREA:** Senegal to Lake Chad. (see the map)
- **Fonio is one of the oldest cereals grown in West Africa, with evidence of cultivation dating back over 5,000 years.**
- **SPECIES:** two main fonio species: white fonio (*Digitaria exilis*) and black fonio (*Digitaria iburua*)
- **VARIETIES:** mainly local varieties selected by farmers. Distinguished mainly by the color of the bunches (white or black) and the speed of growth (extra-early varieties ( $\leq 90$  days), late varieties ( $> 120$  days)).
- **PRODUCTION CONDITIONS:** Undemanding and adaptable to climate change, fonio grows in a wide range of soil and climatic conditions. Resistant to both drought and high rainfall (between 250 and 1,200 millimeters).
- **CHIFFRES DE PRODUCTION:** voir tableau à rajouter sur la carte
- **Fonio yields tiny grains, less than 1 mm in size, traditionally eaten white, like rice. It takes 1,000 seeds to produce 0.4 to 0.6 grams.**
- **GOOD NUTRITIONAL QUALITIES:** suitable for gluten-free diets, relatively low glycemic index (around 66 vs. 95 for rice), light, easily digestible, high levels of essential amino acids (methionine and cystine).
- **USE :**
  - Easy to cook, consumed in many forms: couscous, fritters, porridge, bread, grilled fonio, salad, etc
  - Flour
  - Beverages (beer)

## Fonio sector: current situation

### HARVESTING STAGES

**Harvest:** Hand-harvested : cutting ripe fonio stalks with stickles

**Drying:** Natural drying to reduce humidity and facilitate threshing

**Threshing:** Separation of grains from stems by beating with sticks or trampling

### POST - HARVEST STAGES - 1 TO 3 KG / HOUR - 10 LITERS OF WATER TO WASH AND DE-SAND 1 KG OF FONIO

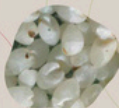
**Cleaning / Winnowing:** Elimination of coarse impurities (debris, stones, straw)  
> Paddy fonio



**Hulling:** Elimination of outer husks (bale)  
Manual with mortar and pestle (long and difficult) or husking machine  
> Shelled fonio



**Blanching:** Elimination of the thin film surrounding the grain/bran (= pericarp and germ)  
Manual with mortar (long and difficult) or hulling machine  
> Blanched fonio



**Washing:** Elimination of foreign particles such as sand to obtain a high-quality product

### STORAGE

### OPTIONAL TRANSFORMATION

### DISTRIBUTION AND COMMERCIALIZATION

- Mainly local and regional
- Higher price than other cereals due to difficult processing stages

