GYGA technology extrapolation domains (TEDs)

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Robust spatial framework for targeting:

- Options for sustainable intensification
  - ‘Taking agronomy to scale’
- New experimentation
  - ‘Biggest bang for the buck’

Hierarchal zonation scheme, with the smallest spatial unit a unique combination of soil type and climate, with added information on yield gap assessment (e.g. Yw with CV)
Principles

- Global with initial focus on SSA
- Generic (not crop specific)
- Targeting rainfed cropping systems
- Focus on soil water storage
- Leveraging on GYGA-CZ and AfSIS soil data
Construction of TEDs

GYGA Climate zonation

Root zone water holding capacity
GYGA climate zone scheme is generic (i.e., not crop-specific), has a reasonable # of climate zones and, relative to previous schemes, it exhibits smaller climate variation within a zone.

## Construction of TEDs

- **Sum of 3 GYGA-CZ variables and RZWHC class (9)**

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Black lines: delimitation of GYGA- climate zones
Colours: GYGA-TEDs
Dominant TEDs

- Per crop dominant TEDs have been determined based on crop-specific harvested area in GYGA countries from SPAM05
- Separate analyses for East and West Africa
Locations of 10 dominant GYGA-TEDs in East Africa
Locations of 10 dominant GYGA-TEDs in West Africa
Crop area coverage dominant TEDs

**East Africa**

- Top 10:
  - Maize: 40%
  - Millet: 60%
  - Sorghum: 40%
  - Rice: 20%
  - Wheat: 20%

- Top 20:
  - Maize: 60%
  - Millet: 80%
  - Sorghum: 60%
  - Rice: 40%
  - Wheat: 40%

- Top 25:
  - Maize: 80%
  - Millet: 100%
  - Sorghum: 80%
  - Rice: 60%
  - Wheat: 60%

**West Africa**

- Top 10:
  - Maize: 20%
  - Millet: 80%
  - Sorghum: 40%
  - Rice: 20%

- Top 20:
  - Maize: 40%
  - Millet: 100%
  - Sorghum: 60%
  - Rice: 40%

- Top 25:
  - Maize: 60%
  - Millet: 100%
  - Sorghum: 80%
  - Rice: 60%
Discussion and possible improvements

- Climate x Soil x Cropping system (and Yg)
- Overlay with additional information:
  - Proximity to roads and markets
  - Access to inputs (seeds, fertilizer,...)
  - Socio-economic information from farm surveys (farm size, labour, input use, off-farm income,....)
Thanks for your attention!

www.yieldgap.org
References


