PGR Management, Pre-Breeding and Bioinformatics

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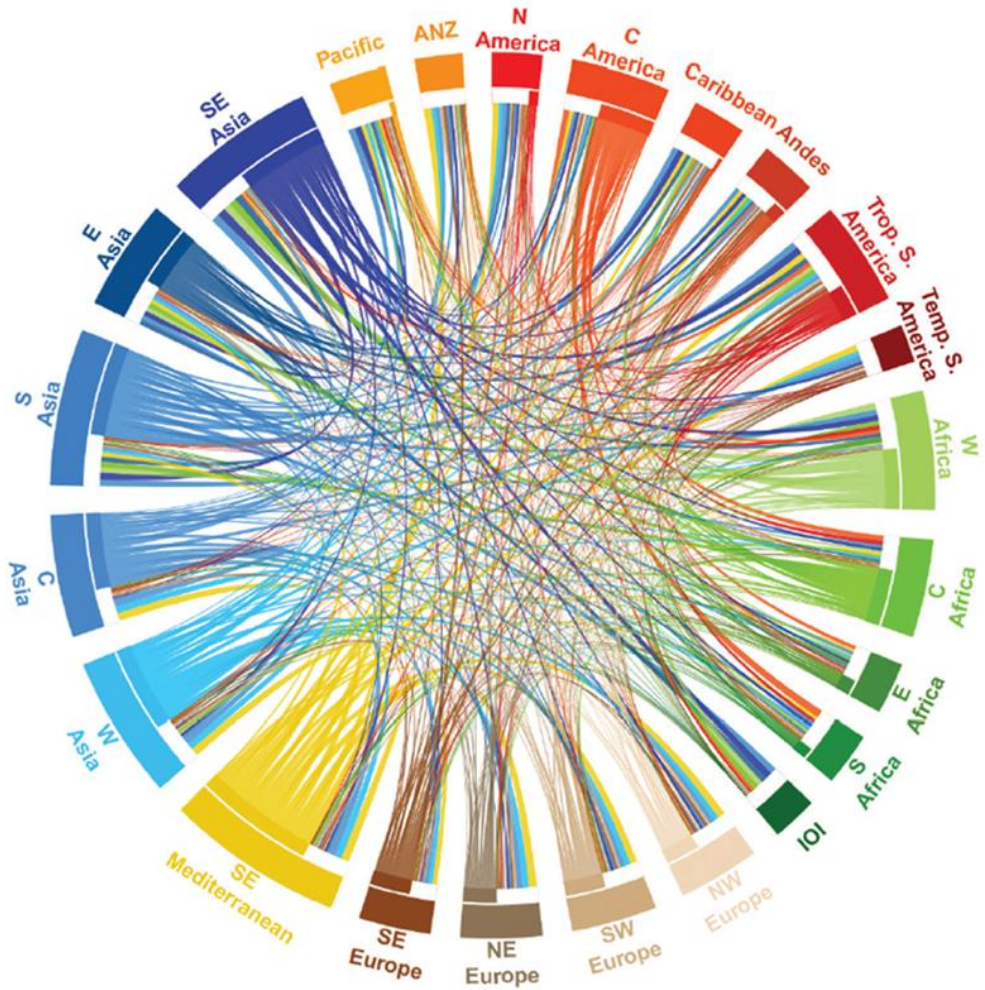
PGR Management, Pre-Breeding and Bioinformatics

- motivation for collaboration in the field of PGR management, pre-breeding and bioinformatics
  - feed the world
  - collaboration increases efficiency
    - GBS protocol standardisation
    - phenotyping in different environments
    - joint research on *Brassica* or wheat
    - access to each other PGR and research material
      - enrichment of breeding material
      - research references
    - collaboration PGR actors to strengthen conservation

PGR Management – activities & challenges

- PGR: very high global interdependence



Calories in regional food supplies and their origins

(Source: Khoury *et al.* 2015)

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PGR Management, Pre-Breeding and Bioinformatics

- needs for better PGR management to support plant breeders
  - genebank-bioinformatics
    - exchanging data / standard development
      - Elixir extension to China for phenotyping
      - crop ontology development (incl. phenotyping methodology)
      - recommended checks / (mini) core collections
    - interfaces between genebank and its users
      - access to data
      - use-case oriented applications

PGR Management, Pre-Breeding and Bioinformatics

- needs for better PGR management to support plant breeders
  - adding value to genebank material
    - hi-throughput data generation
      - genotyping
      - phenotyping
    - methodology development
      - genomic selection / breeding value
      - GWAS / QTL-mapping
      - gene identification
      - allele mining

PGR Management, Pre-Breeding and Bioinformatics

- needs for better PGR management to support plant breeders
  - widening genepools
    - development innovative methods to broaden genetic basis of important crops (create new material)
      - synthetic varieties / fixed heterosis of allo-ploidy
      - use crop wild relatives in breeding

PGR Management, Pre-Breeding and Bioinformatics

- critical factors
  - access to germplasm and data
    - inclusion passport data in Genesys
    - avoidance of legal and bureaucratic obstacles
  - mutual trust and goodwill of those involved
    - as in the discussions at the basis of this report

Thank you for your attention !