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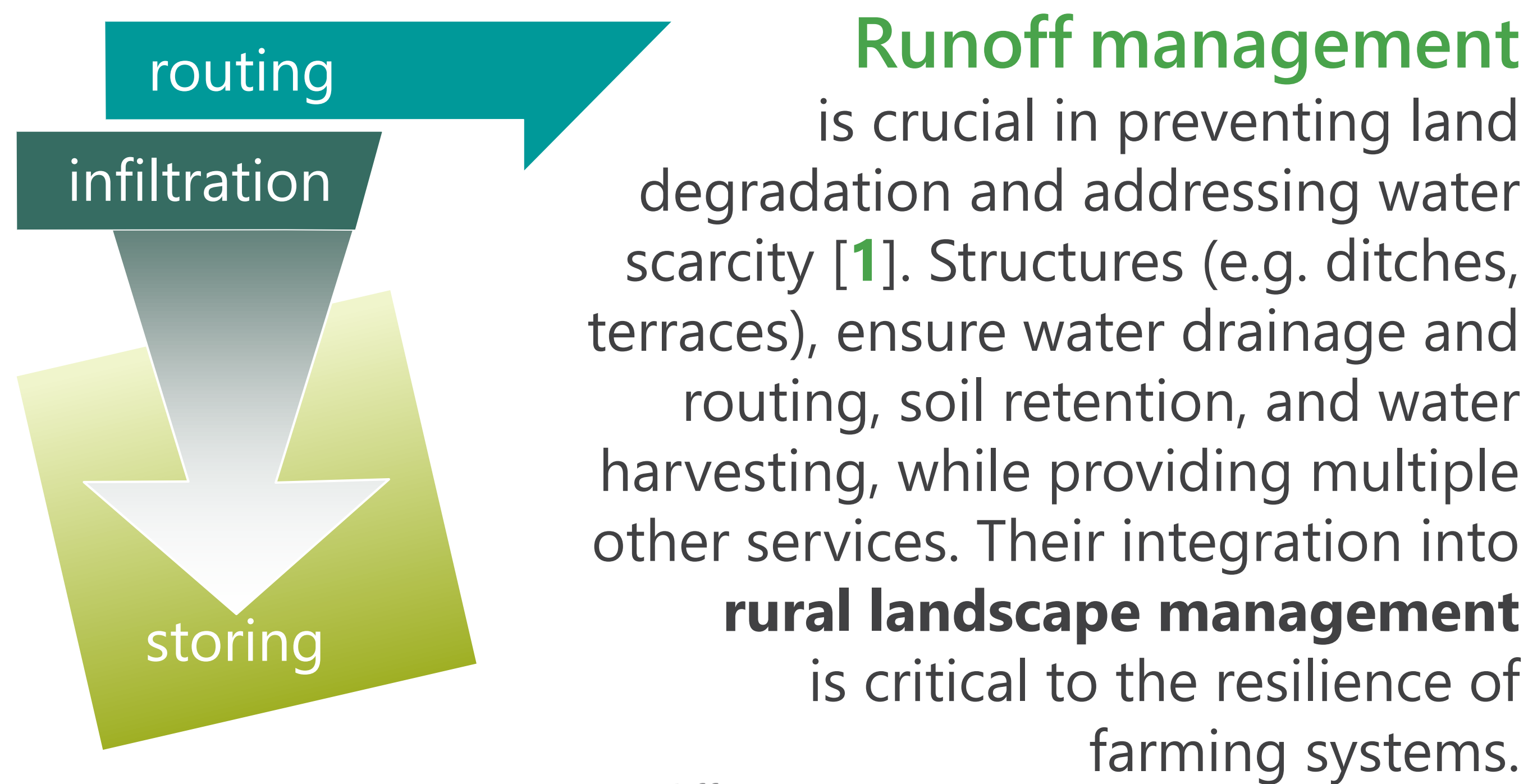


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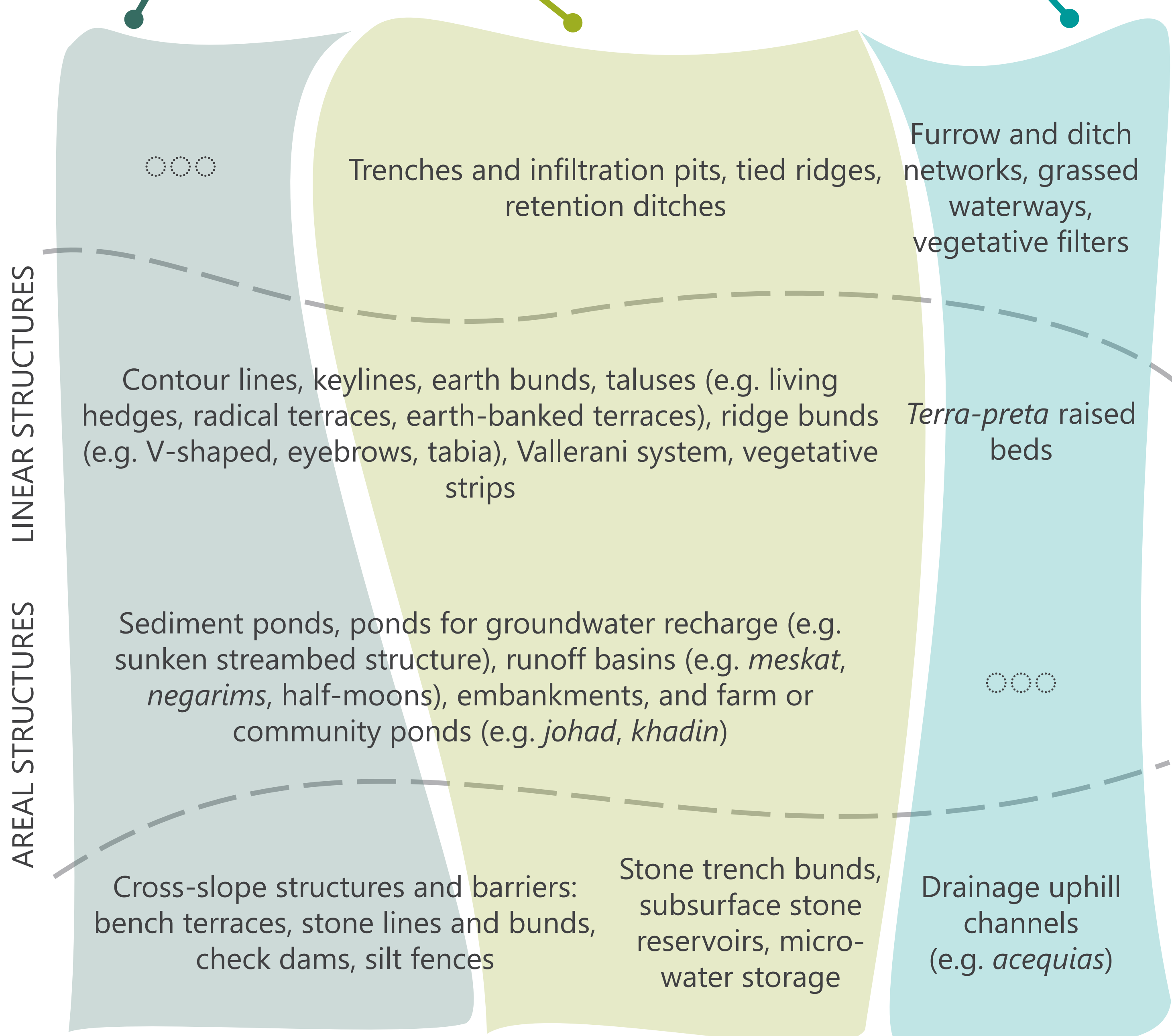
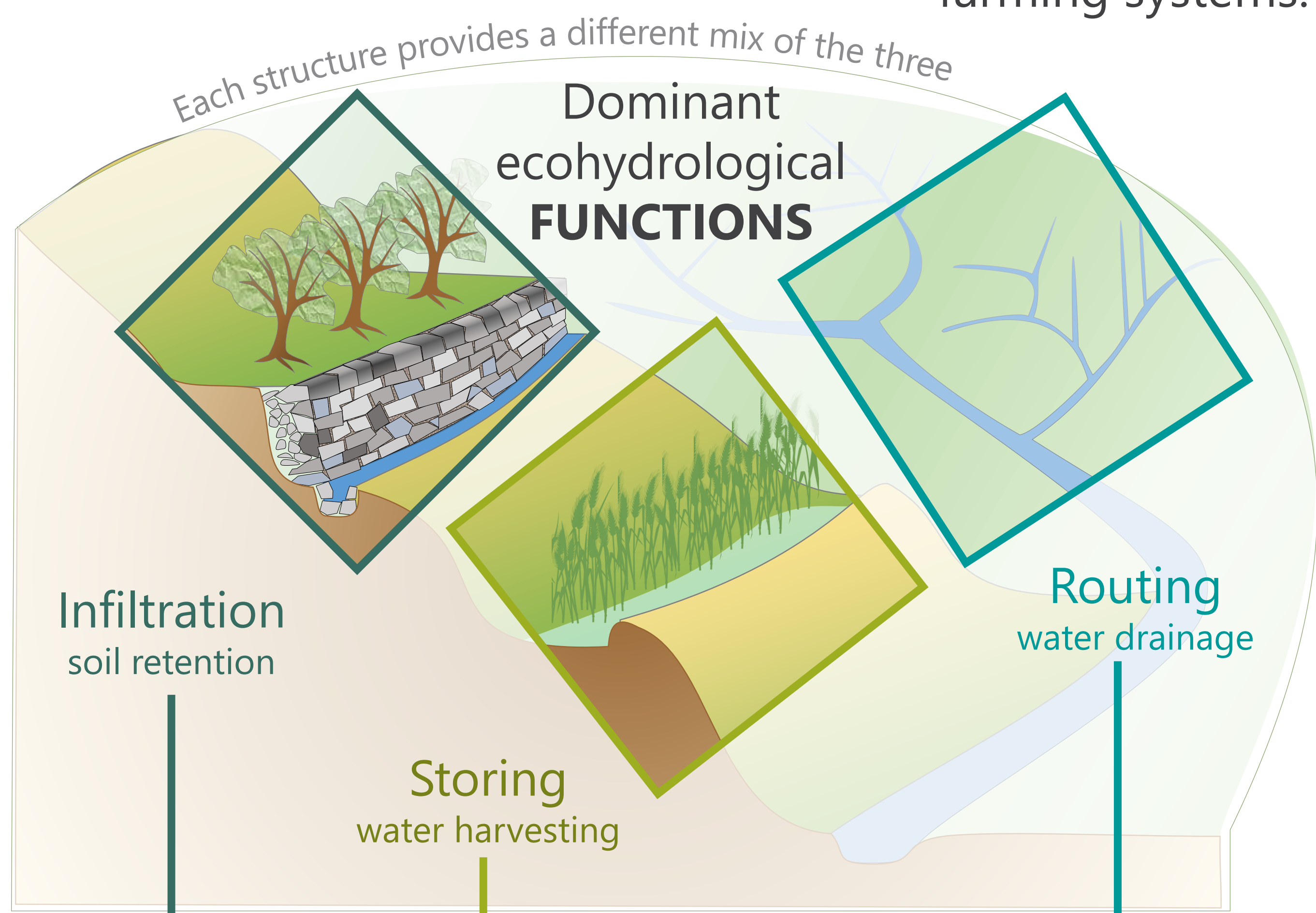
A classification of maintenance practices for agricultural runoff management structures to enhance climate adaptation scenarios and strategies

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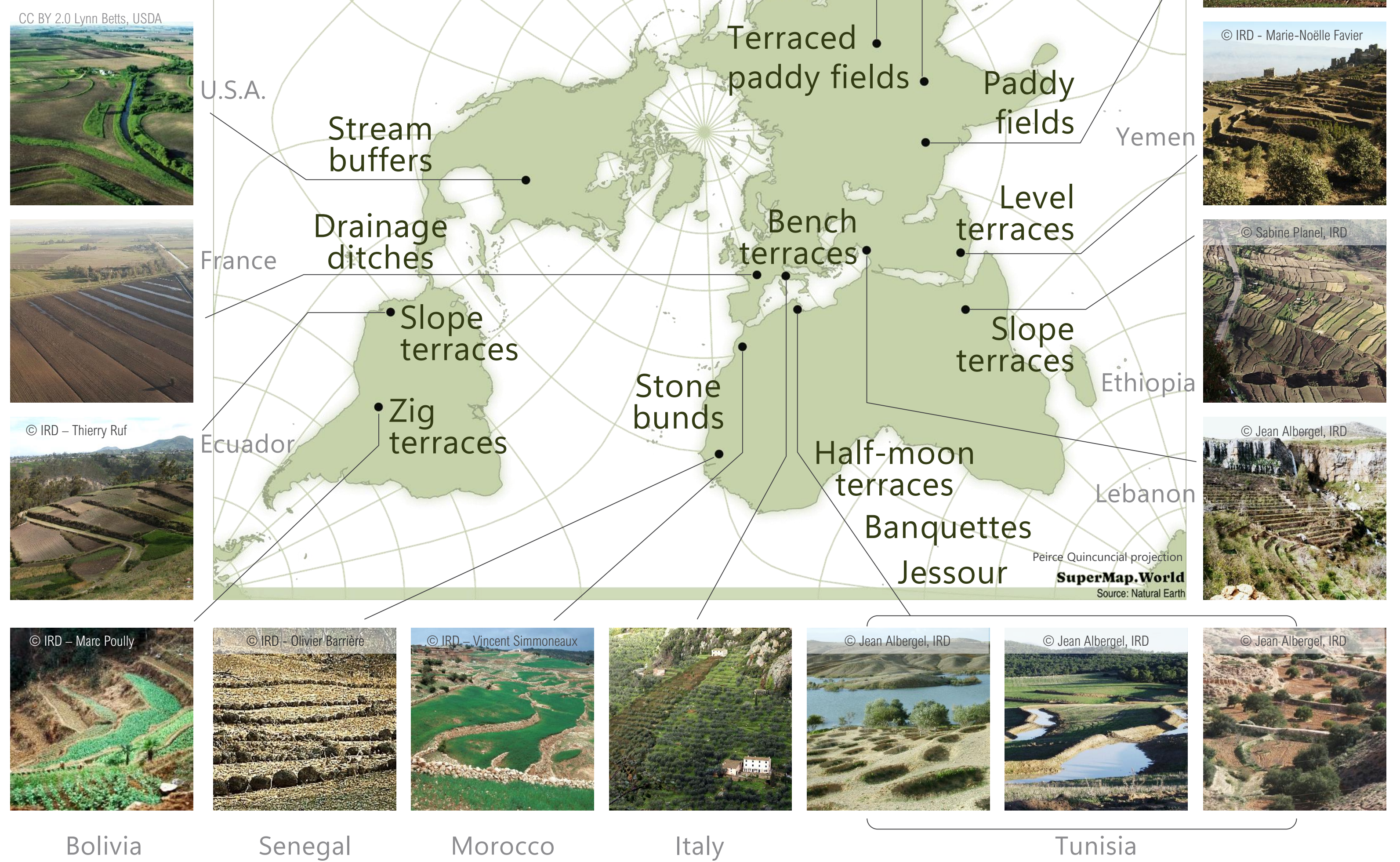
Runoff management is crucial in preventing land degradation and addressing water scarcity [1]. Structures (e.g. ditches, terraces), ensure water drainage and routing, soil retention, and water harvesting, while providing multiple other services. Their integration into **rural landscape management** is critical to the resilience of farming systems.



Structures vary widely in shapes, systems, and nomenclature, reflecting local contexts.

Maintenance practices are still poorly described, despite their relevance to face **climate change consequences**: soil erosion and flooding risks, droughts and water harvesting needs.

Examples of the heterogeneity of shapes, materials and naming of the onsite runoff management structures worldwide. Terrace naming is based on literature [2,3], unless otherwise specified by the authors of the photos.



Ditching
section cleaning (e.g. vegetation and sediment management)

Shaping
shape and earthwork renovation

Building
reparation, rebuilding, and veget. manag. (+ materials)

We propose to cross three fundamental **construction ACTIONS** based on the ethnological concept of "technical fact" [4] with ecohydrological functions, and geometries.

The result is the definition of a **framework** for harmonising the description of maintenance practices.

Future works should explore the integration of structures' **maintenance** into the farming system and landscape management of soil and water.

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[1] Molénat et al. (2023) Diversification from field to landscape to adapt Mediterranean rainfed agriculture to water scarcity in climate change context, *Curr. Opin. Environ. Sustain.*, 65:101336

[2] Chen, Wei, & Chen (2017) Effects of Terracing Practices on Water Erosion Control in China: A Meta-Analysis, *Earth-Science Reviews* 173:109–21

[3] Dorren, & Rey (2004) A Review of the Effect of Terracing on Erosion. In *Briefing Papers*, 97–108. Cinque Terre (Italy): Soil Conservation and Protection for Europe (SCAPE) project

[4] Gras et al. (1989) *Le Fait technique en agronomie: activité agricole, concepts et méthodes d'étude*, Ed. L'Harmattan, Paris