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Humusica 2, article 19: Techno humus systems and global change–conservation agriculture and 4/1000 proposal☆

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[l] Masanobu Fukuoka (Japanese: 吳凡) (1913 – 2008) was a Japanese farmer and philosopher celebrated for his natural farming (Fukuoka, 1985)

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ABSTRACT

Philosophy can overlap pedology. It is not casual that life begins and finishes in the soil. We separated the concepts of Humipedon, Copedon and Lithopedon. Some sections were dedicated to the founders of the movement for a new type of agriculture (agroecology). They simply proclaim to accompany the process of natural evolution instead of spending a lot of energy in hunting competitor organisms with pesticides or boosting the soil with mineral fertilisations and tillage. The core of the article is built on a biological concept of soil and shows researches supporting this view. After pointing to the soil structure and illustrating its natural genesis, explaining which cultural conditions may improve its quality, we finished the article with economic considerations, combining at planet level a program of soil restoration with a greenhouse effect mitigation.

What a reader should have in mind at the end of the article: soil organisms have a prominent positive influence on soil structure and fertility; their mass is proportional to the soil organic matter quantity; it is possible to contrast the climate warming using the soil as sink of C. We estimated that the Agro Humipedons of a European economically active region could sink about 13 or 20% of its emissions, switching from conventional to minimum or no tillage during the coming 40 years. At planetary level, a well programmed 4 per 1000 action can even be more efficacious and compensate a part of the global greenhouse gas effect.

☆ Background music while reading: The Doors – Riders On The Storm (ORIGINAL!) — driving with Jim: https://www.youtube.com/watch?v=lS-af9Q-zvQ&list=RDlS-af9Q-zvQ&t=3.

Riders on the storm
Riders on the storm
Into this house we're born
Into this world we're thrown
Like a dog without a bone
An actor out on loan
Riders on the storm

There's a killer on the road
His brain is squirmin' like a toad
Take a long holiday
Let your children play
If you give this man a ride
Sweet family will die
Killer on the road, yeah

Girl, you gotta love your man
Girl, you gotta love your man
Take him by the hand
Make him understand
The world on you depends
Our life will never end
Gotta love your man, yeah

Riders on the storm
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Into this house we're born
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Organic Agriculture
Conservation agriculture
Soil Organic Carbon
Soil aggregates
Soil C sequestration

1. Introduction

In Humusica 1, Article 1: Essential bases – Vocabulary, the soil profile is divided into Humipedon, Copedon and Lithopedon (Fig. 1a and b). Each sub-unit of soil profile includes different soil horizons. We suggest to observe each sub-unit at different space and time scales (Table 1). In fact, each sub-unit is generated by specific biological and abiotic processes (Fig. 1c–e). Adapted disciplines are necessary for efficiently studying each

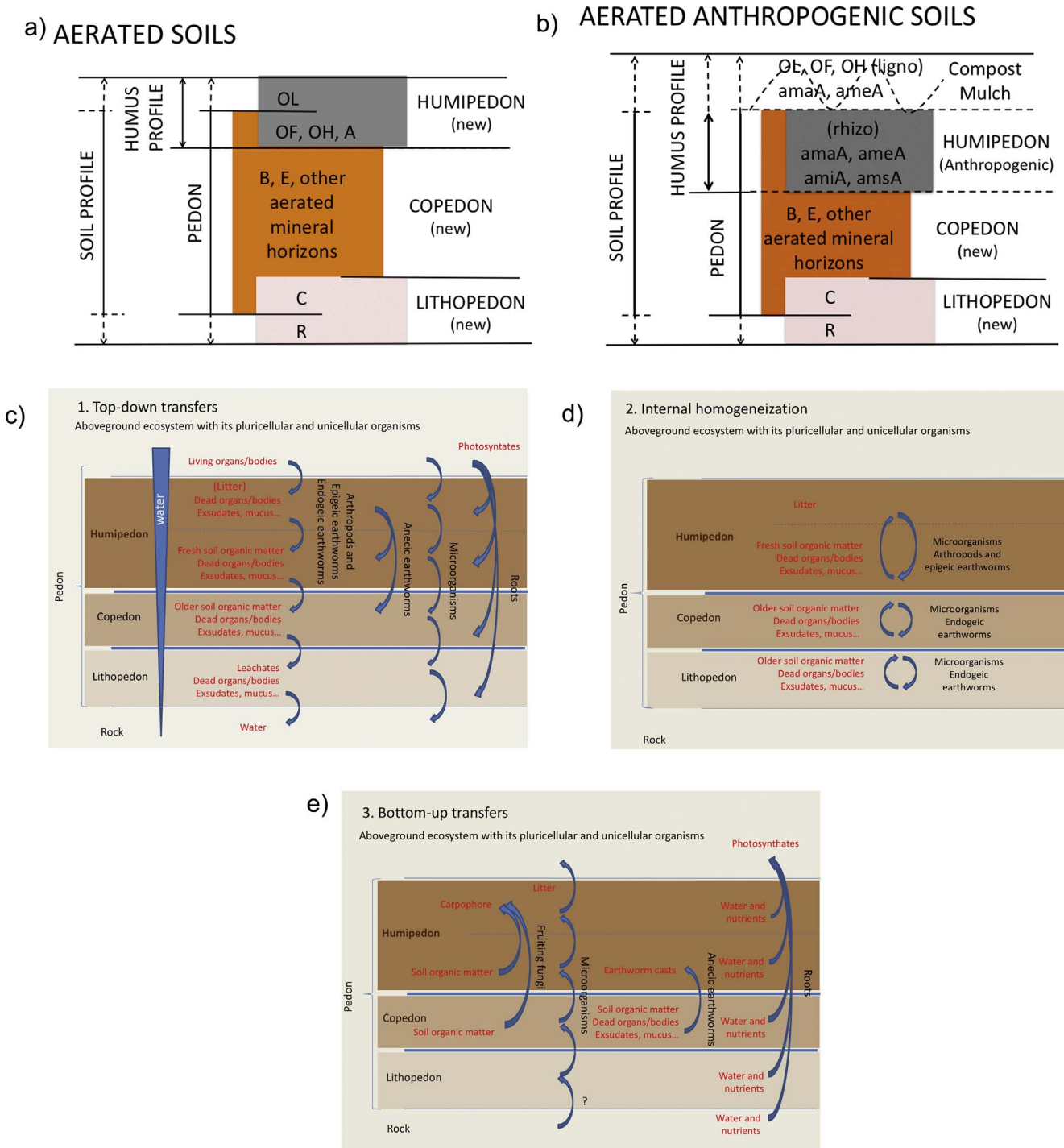

Fig. 1. Humipedon, Copedon and Lithopedon, three relatively independent parts of a soil profile in aerated a) natural and b) anthropogenic soils; aboveground ecosystem with its pluricellular and unicellular organisms: c) bottom-up transfers; d) Internal homogeneization: e) bottom-up transfers.