

Soil: connecting land, people and food

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Soil connections

- Soil connection by physical contact for soil management and personal awareness
- Soil connection as a model of the human mind for success of agroecological approaches
















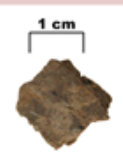


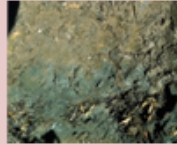



Soil management: *structure*

Structure is the arrangement of particles and pores that allows:

- root growth
- water drainage and retention
- favourable gas exchange
- mineralisation and uptake of nutrients
- earthworms and biodiversity of microbes



Structure quality	Size and appearance of aggregates	Visible porosity and Roots	Appearance after break-up: various soils	Appearance after break-up: same soil different tillage	Distinguishing feature	Appearance and description of natural or reduced fragment of ~ 1.5 cm diameter
Sq1 Friable Aggregates readily crumble with fingers	Mostly < 6 mm after crumbling	Highly porous Roots throughout the soil			 Fine aggregates	 The action of breaking the block is enough to reveal them. Large aggregates are composed of smaller ones, held by roots.
Sq2 Intact Aggregates easy to break with one hand	A mixture of porous, rounded aggregates from 2mm - 7 cm. No clods present	Most aggregates are porous Roots throughout the soil			 High aggregate porosity	 Aggregates when obtained are rounded, very fragile, crumble very easily and are highly porous.
Sq3 Firm Most aggregates break with one hand	A mixture of porous aggregates from 2mm -10 cm; less than 30% are <1 cm. Some angular, non-porous aggregates (clods) may be present	Macropores and cracks present. Porosity and roots both within aggregates.			 Low aggregate porosity	 Aggregate fragments are fairly easy to obtain. They have few visible pores and are rounded. Roots usually grow through the aggregates.
Sq4 Compact Requires considerable effort to break aggregates with one hand	Mostly large > 10 cm and sub-angular non-porous; horizontal/platy also possible; less than 30% are <7 cm	Few macropores and cracks All roots are clustered in macropores and around aggregates			 Distinct macropores	 Aggregate fragments are easy to obtain when soil is wet, in cube shapes which are very sharp-edged and show cracks internally.
Sq5 Very compact Difficult to break up	Mostly large > 10 cm, very few < 7 cm, angular and non-porous	Very low porosity. Macropores may be present. May contain anaerobic zones. Few roots, if any, and restricted to cracks			 Grey-blue colour	 Aggregate fragments are easy to obtain when soil is wet, although considerable force may be needed. No pores or cracks are visible usually.

Soil management: *quality first*



Improvement by:



Natural pasture
Roots
Worms
Organic fertiliser
Rest



The importance of soil and water management



Connecting with soil: *soil awareness*



Reveals power to produce and vulnerability to abuse

Soil and food

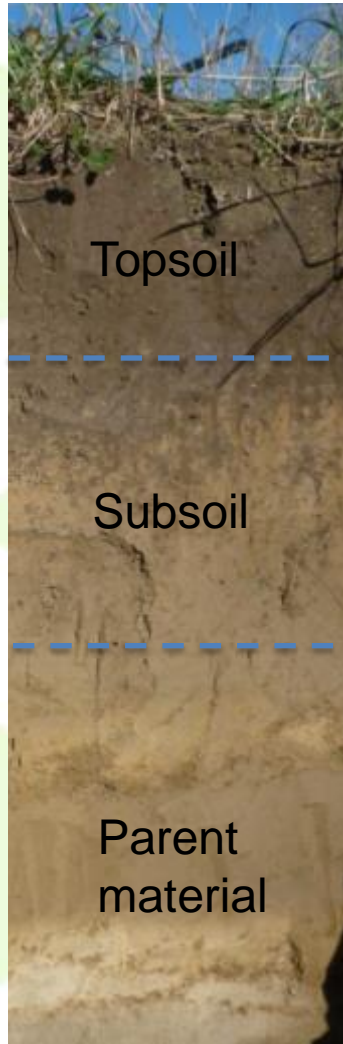
- ‘The soil relates and interconnects us all, loves us all unconditionally and feeds us all indiscriminately’

Satish Kumar, 2013



© Agroscope (Gabriela Brändle, Urs Zihlmann),
LANAT (Andreas Chervet)

Adapt our relationship with soil

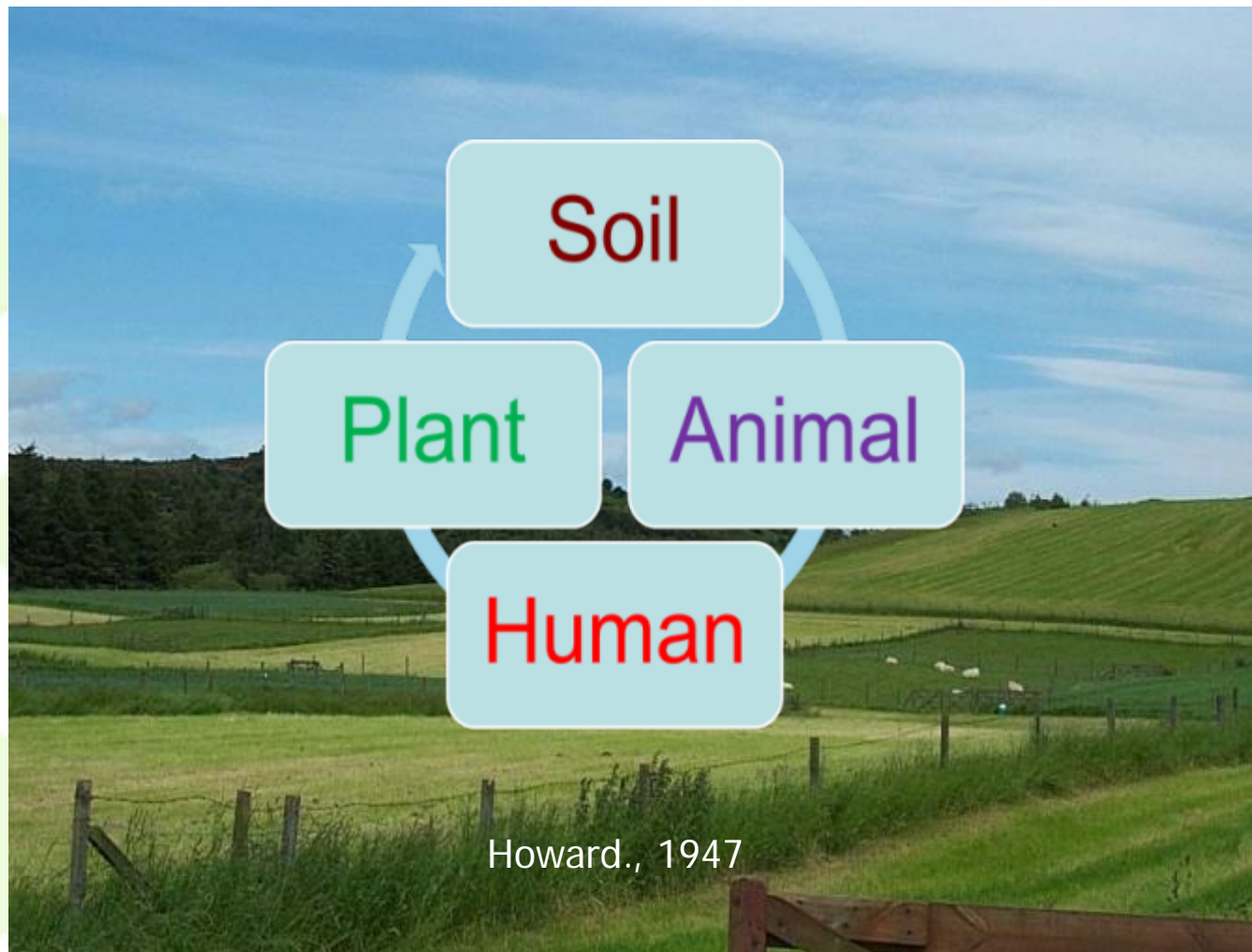


Personal consciousness

Personal unconscious

Inherited traits, values,
collective unconscious

Soil and health: *Wholeness, Connection*



Agroecology: *the 'soil' properties*



Agroecology

Industrial agriculture

Integrative and linked through networks

Self-assertive and hierarchical

Intuitive and holistic thinking, flexible

Rational and reductionist thinking

Community, diversity and co-operation

Specialisation and competitive

Harmony with nature

Domination over nature

Seeks wisdom from ecosystems

Exploitative

Quality, health and restraint

Quantity, expansion and greed

Motivate people to change diets

- ‘Need to define a system description that includes communities to stabilise the food system’

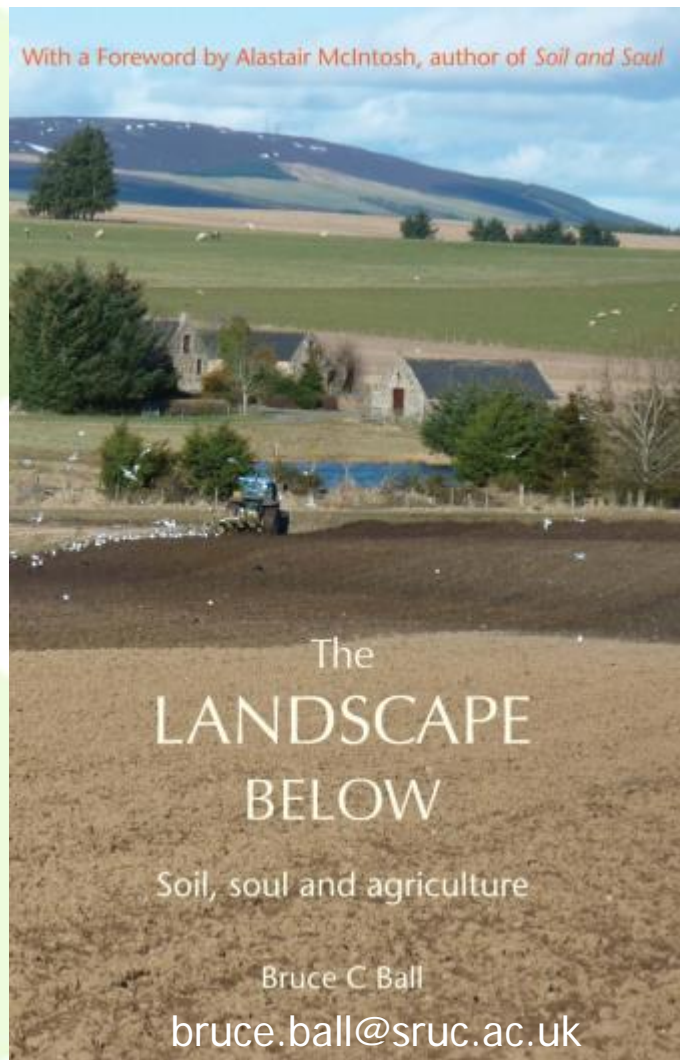
P. Thompson 1995

‘The spirit of the soil’

- ‘Soil-like’ properties are needed in all to help agroecological systems to feed us



Book: 'The Landscape Below'



The story of the soil and agriculture and how applying principles of soil care can lead to better, more fulfilled lives

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