

Oxford Farming Conference

The Soil Renaissance

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Soil Renaissance – International Focus

- **United Nations (2015)**
 - International Year of Soils
- **Sustainable Development Goals**
 - SDG15: halting and reversing land degradation
- **21st Conference of the Parties(COP 21)**
 - “4 per 1,000” carbon sequestration
- **Environmental Audit Committee (House of Commons)**
 - Clear plan needed for protecting soil



Conservation Agriculture

Three Guiding Principles

- Minimal soil disturbance for crop establishment
- Permanent organic soil cover – residues, cover crops
- Diverse crop rotations

Best results with CA happen when the three guiding principles are being used and implemented together

Soil Tillage & Disturbance

Much confusion over terms used

- Mouldboard ploughing /Disc ploughing
- Non-inversion tillage, chisel ploughing
- Reduced tillage, planting basins etc.
- Conservation tillage, minimum tillage
- Direct drilling, direct seeding, strip tillage,
- No tillage, Zero tillage

Increasing soil disturbance

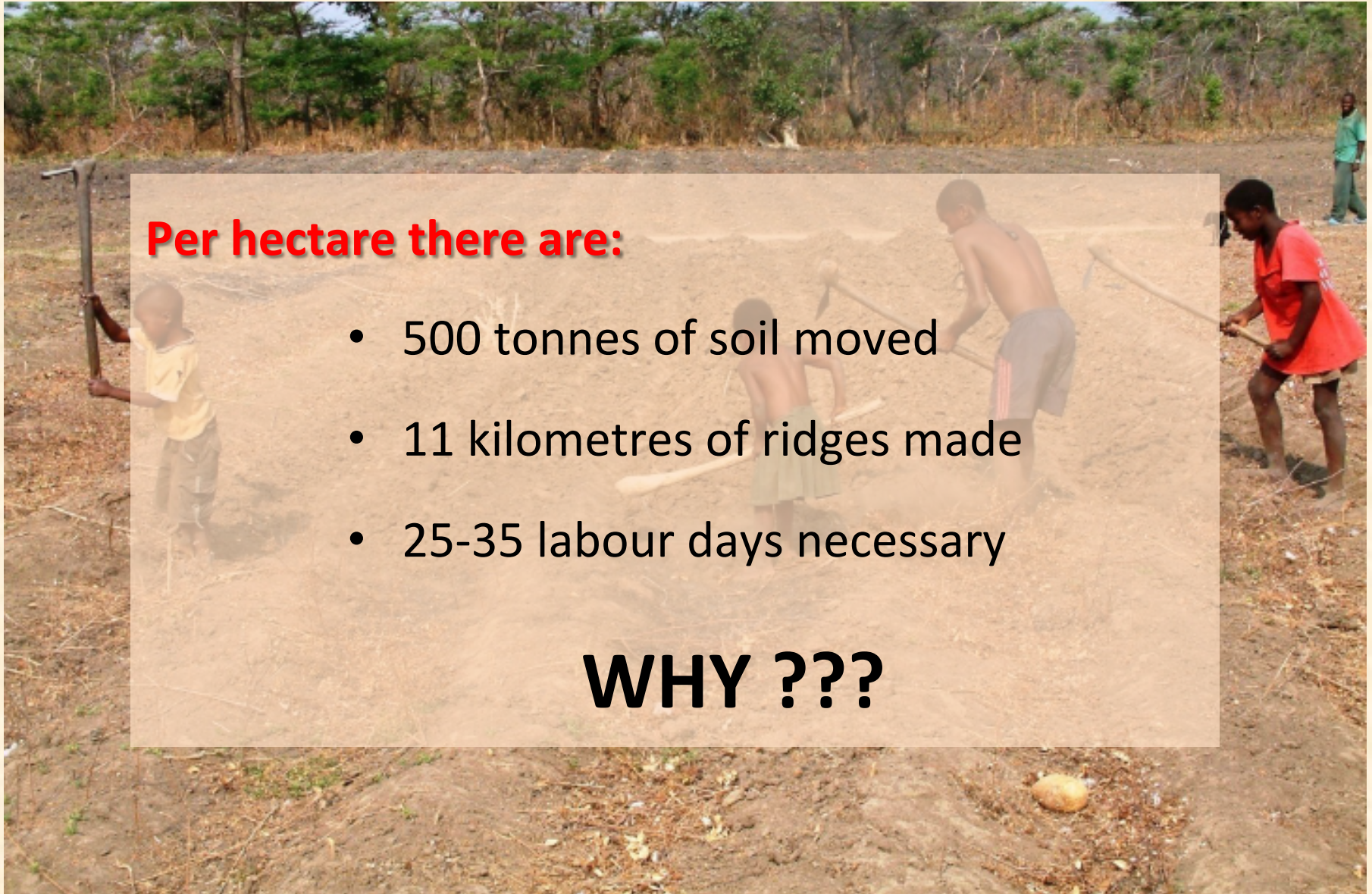
Reduced soil exposure

Soil Disturbance

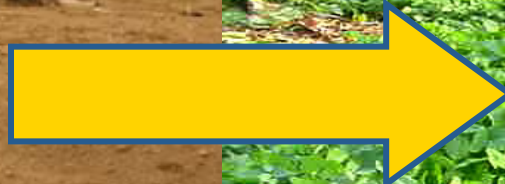
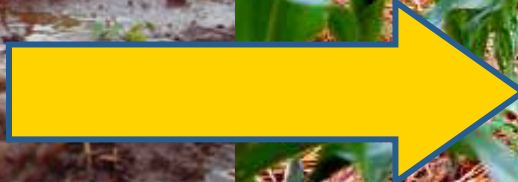
Per hectare there are:

- 500 tonnes of soil moved
- 11 kilometres of ridges made
- 25-35 labour days necessary

WHY ???



Soil Cover – Climate Resilience



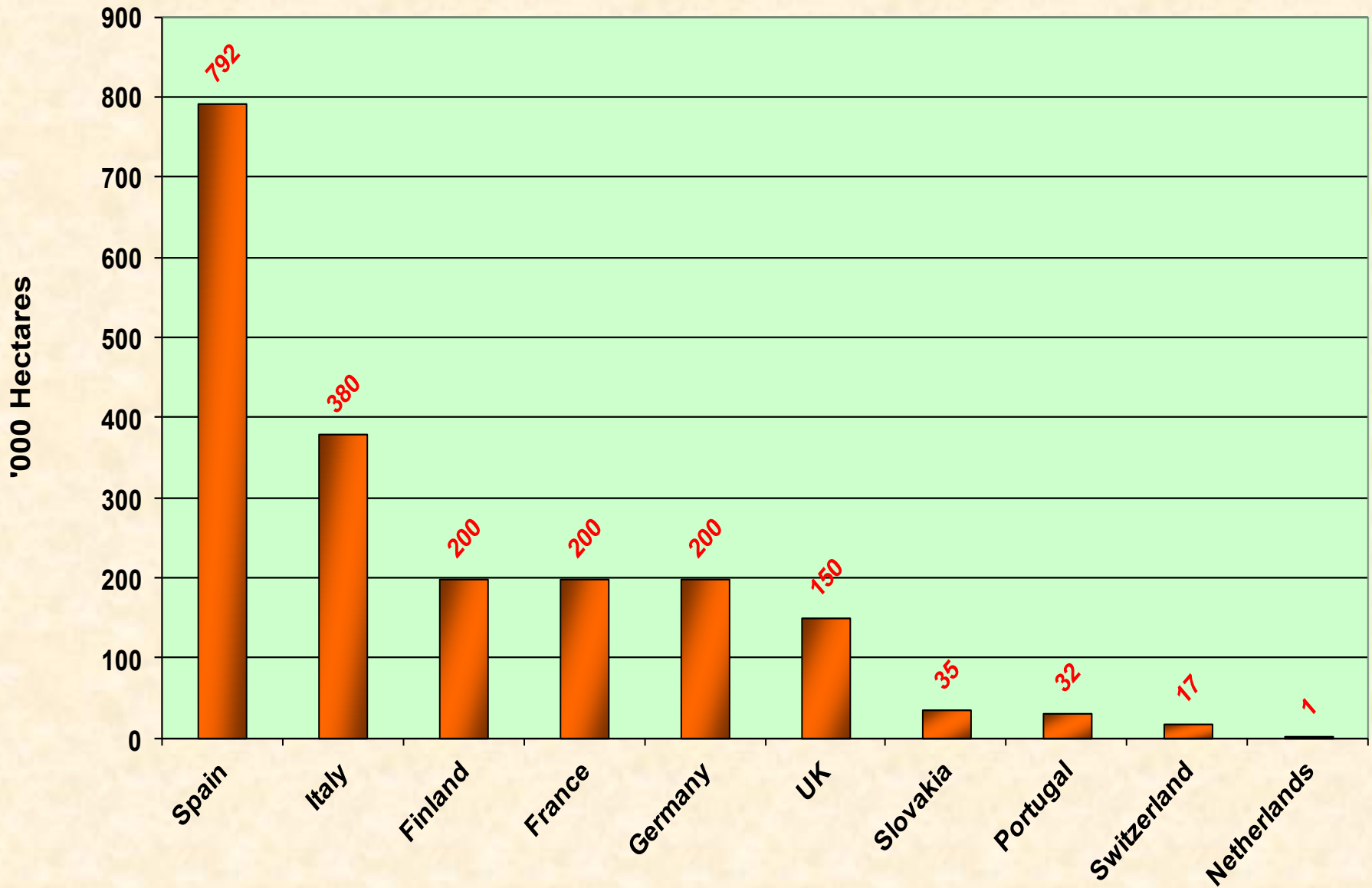
Source: USDA -NRCS South Dakota 19/06/2014

Source: Thierfelder - CIMMYT, Malawi 2013

Rotations – Soil & Plant Diversity



Europe - Adoption of Conservation Agriculture



A small dose of reality

| Contribution of Direct Payments to Farm Income | | |
|--|------------|---------------|
| Year | All Farms | Tillage Farms |
| 2011 | 73% | 74% |
| 2012 | 58% | 65% |
| 2013 | 77% | 92% |
| 2014 | 72% | 90% |
| 2015 | 65% | 71% |
| Average | 69% | 78.4% |

Soil Renaissance

What's needed ...

- Accelerated levels of land degradation – 75Bt/yr
- Major concern for general society
- Disincentivize soil damaging practices
- Encourage and support changes to sustainable practice
- Reward land managers for beneficial ecosystem services
- Pro-active farm-focused supportive research

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