

Tudi

Transforming **U**nsustainable management of soils in key agricultural systems in EU and China

Developing an **i**ntegrated platform of alternatives to reverse soil degradation

Child explorers on a mission for good soil



This project receives funding from the European Union's Horizon 2020 Research and Innovation action under grant agreement No 101000224.

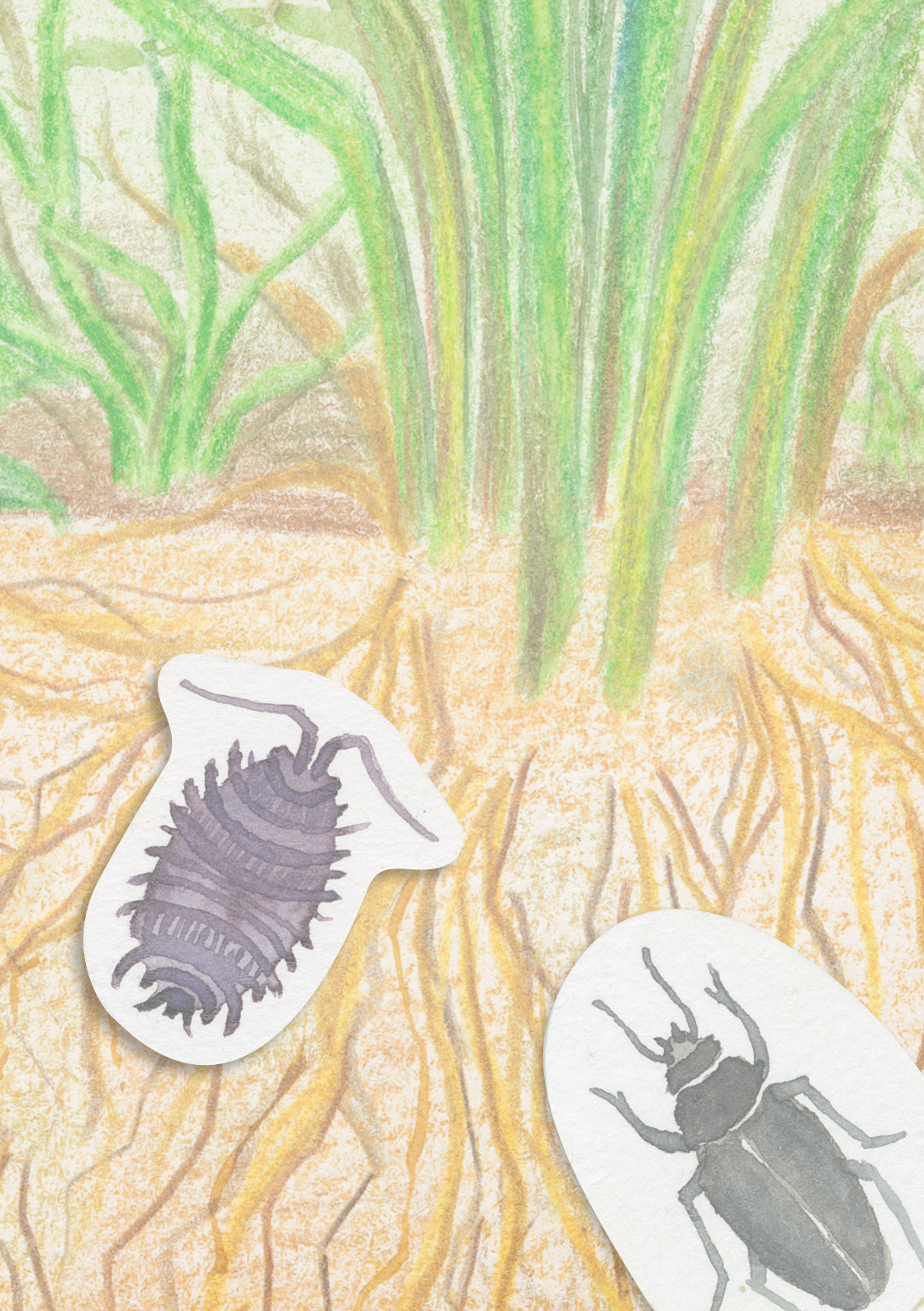
A child's drawing of a plant with green leaves and brown roots growing in soil. The drawing is done with crayons or pastels. The soil is depicted with various shades of brown and tan, and there are some small, circular, spiral-like patterns in the soil, possibly representing worms or soil structure. The overall style is simple and illustrative.

Child explorers on a mission for good soil

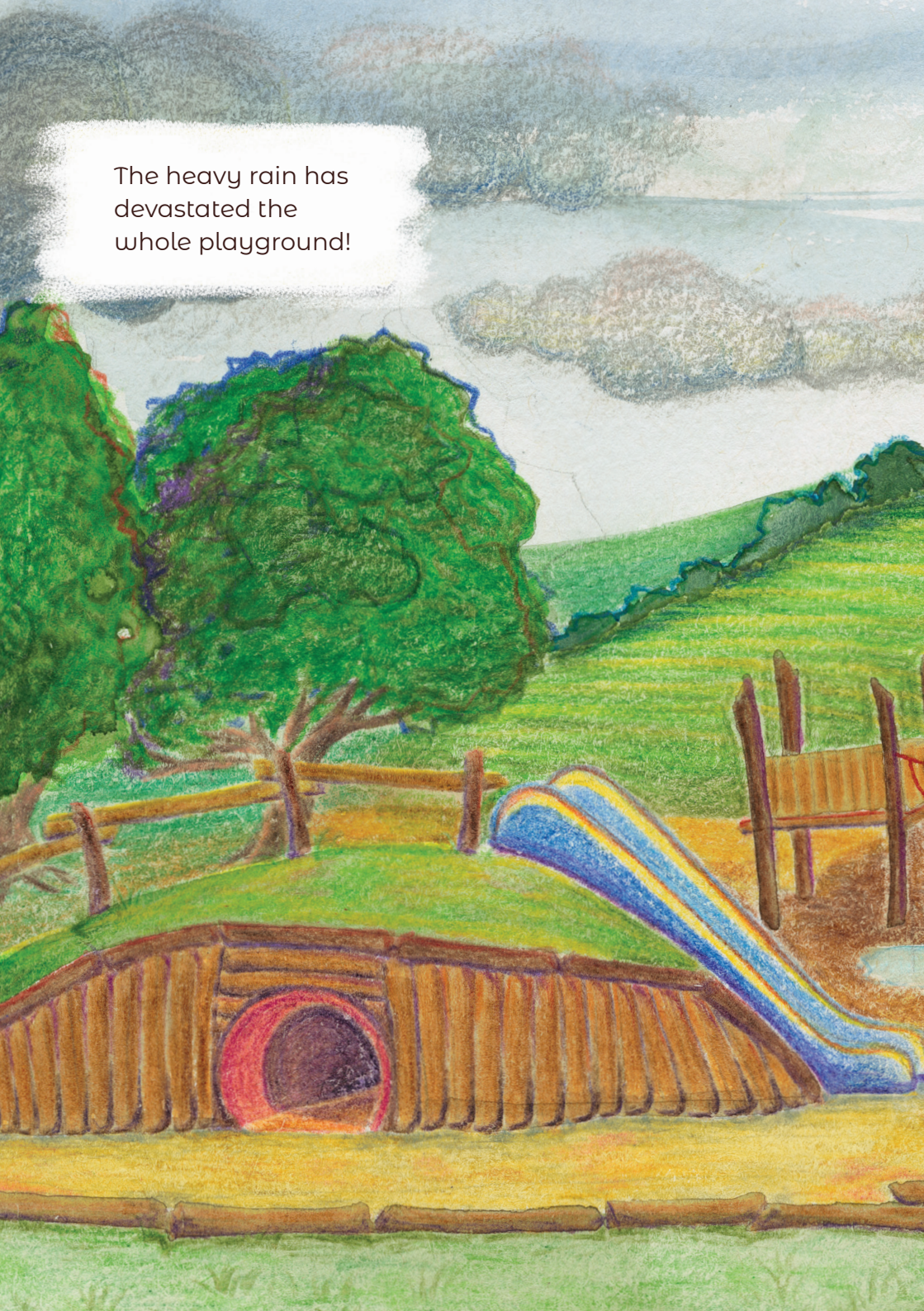
Artwork: Johanna Loicht

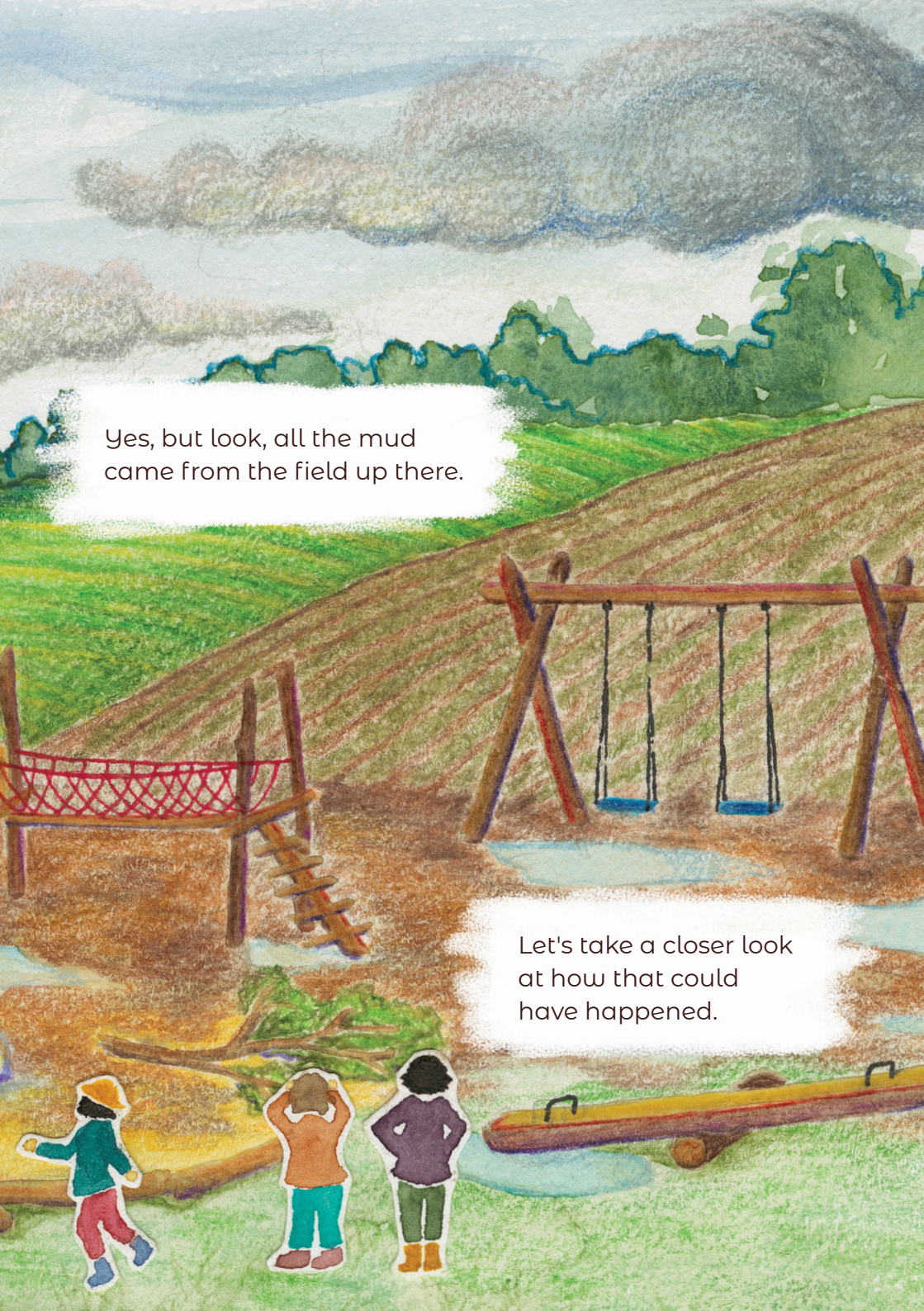
Text: Gunther Liebhard

Graphical formatting: Pensoft



The heavy rain has devastated the whole playground!





Yes, but look, all the mud
came from the field up there.

Let's take a closer look
at how that could
have happened.

Look, the water is running from the neighbourhood into the fields!

But on the one field where the plants are standing, much less runs down than on the field where nothing is growing.



That's right, but nothing comes out of the forest over there.





Why did the rain wash away all the soil in some areas, but not in others?

It rarely rains heavily. But when it does it's important that the soil can absorb the water quickly and that it doesn't run off superficially and wash away the good soil.

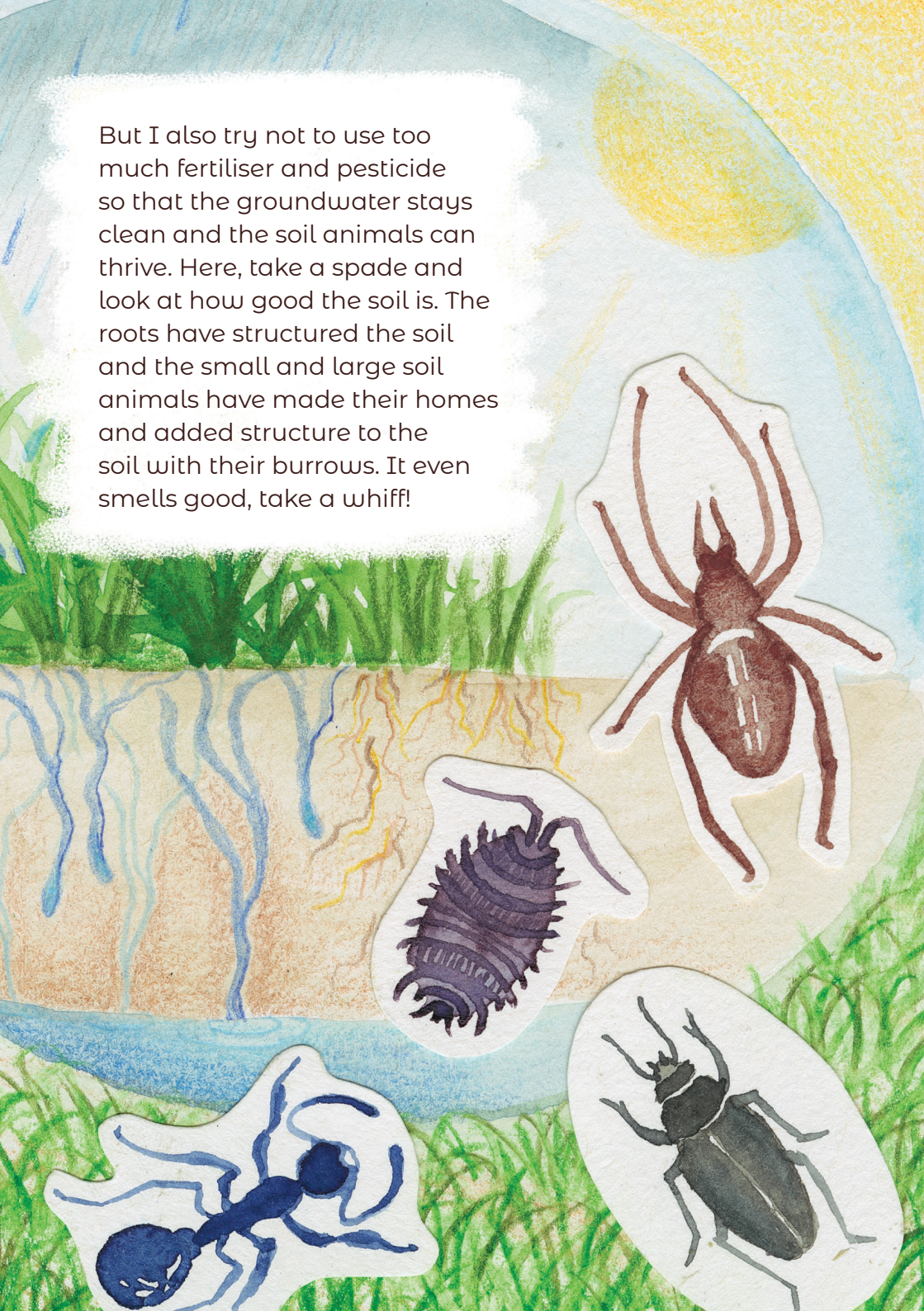


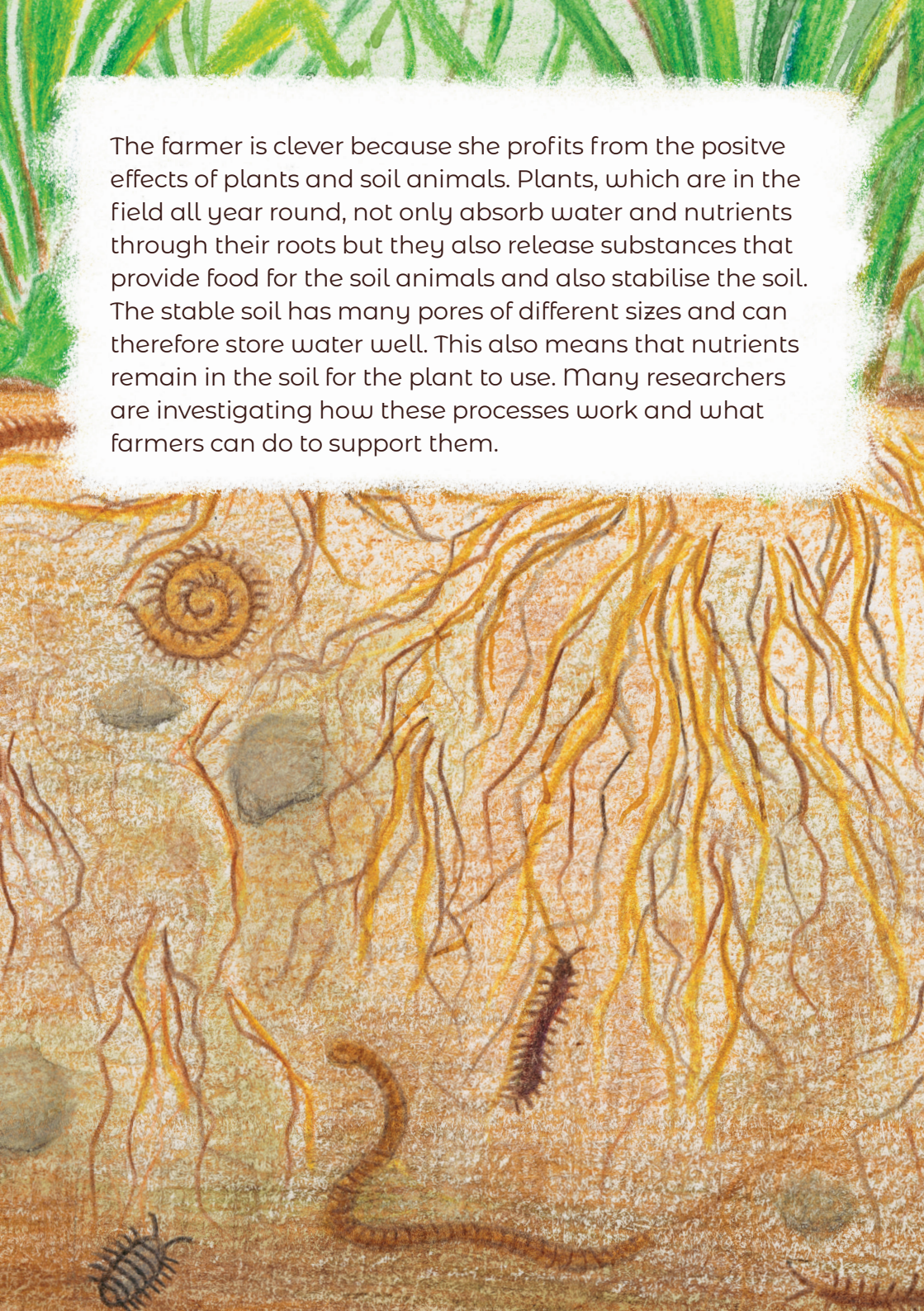
Unfortunately, heavy rainfall is likely to become more frequent, so it is increasingly important to have soil that does not seal quickly, but can absorb water well over a long period of time. But let's ask the farmers directly how we can protect the soil.

I try to keep the ground covered with plants as much as possible. This way the rain falls on the plants and not directly on the soil. This protects the soil and keeps the soil pores open. I also try to loosen the soil mechanically as little as possible to avoid disturbing the soil and its inhabitants. I want the plants to have good growing conditions and I have to make sure that no diseases or pests destroy the plants.



But I also try not to use too much fertiliser and pesticide so that the groundwater stays clean and the soil animals can thrive. Here, take a spade and look at how good the soil is. The roots have structured the soil and the small and large soil animals have made their homes and added structure to the soil with their burrows. It even smells good, take a whiff!



The illustration is a cross-section of soil. At the top, there are green grass-like plants. Below them, a network of yellow and brown roots extends downwards. The soil is depicted with various textures and colors, including brown, tan, and grey, representing different soil layers and structures. Several soil animals are shown: a large, brown, segmented earthworm in the lower center; a smaller, dark, segmented worm in the middle right; a circular, spiral-shaped organism in the upper left; and a small, dark, segmented insect-like creature in the lower left. The overall style is a textured, painterly illustration.

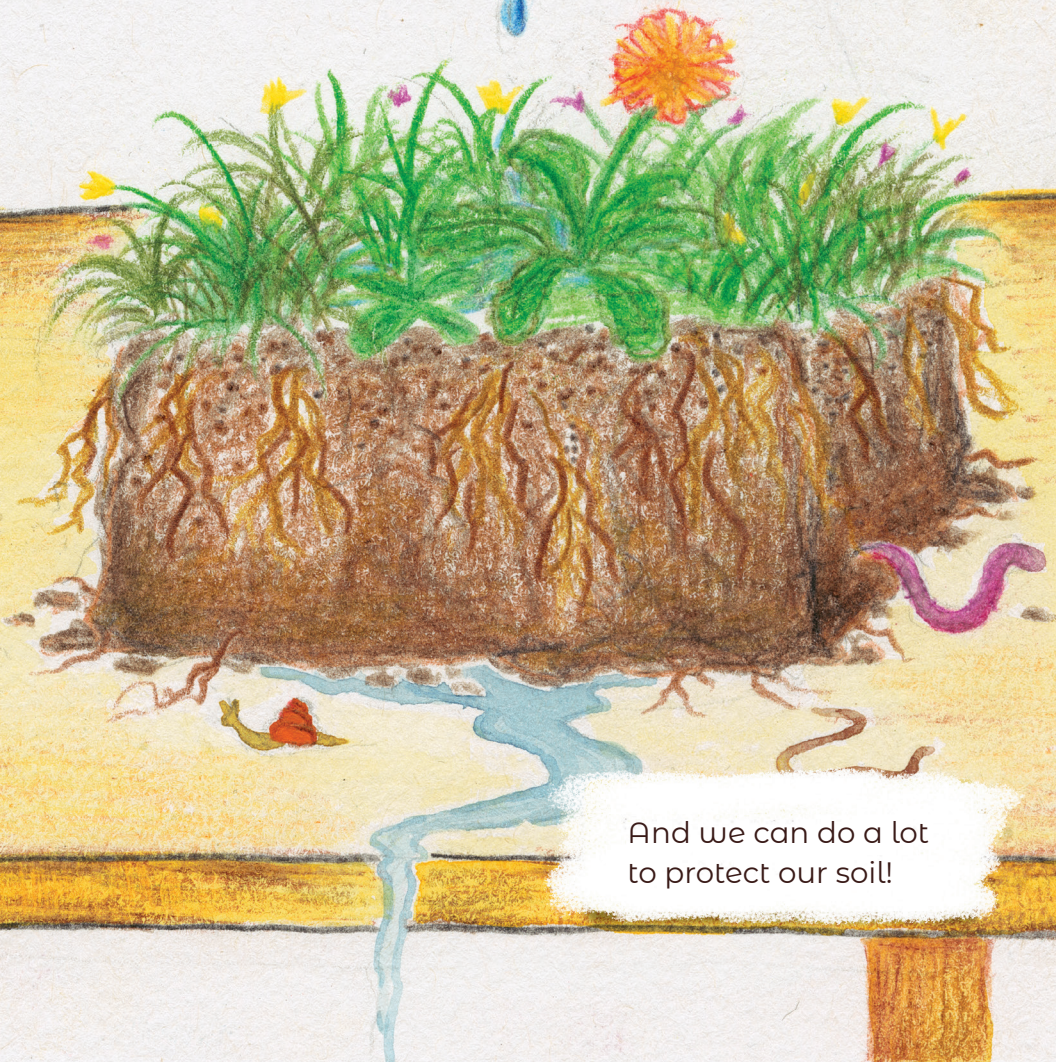


I prepared an experiment for you:
Here are two cut-out blocks of soil
from different management.
Pour water over both blocks
and see what happens.



I can see the pores clearly in
the right soil with cover crops!
And the water stays in the soil
and doesn't seep through!

Yes, the soil animals have a better habitat in the soil and, together with the plants, help to ensure that the soil remains fertile, can store water well and is not washed away so easily.



And we can do a lot to protect our soil!



TUdi is a project supported by the European Union's Horizon 2020 programme. Its goal is to improve the health of soil – the ground we need to grow our food.

The project brings together scientists from fifteen different organisations. They are working as a team across the European Union, China, and New Zealand to find better ways to care for soil, especially in places where farming has harmed it.

In some areas, farming methods have made the soil unhealthy. This can cause problems, like making it harder to grow food in the future. TUdi wants to change that by helping farmers use new, smarter ways of farming that protect the soil – while still letting them grow crops and earn a living.

The goal is to make farming better for people and for the planet!



Consortium

Agrisat; Beijing Forestry University; Beijing Normal University; HUN-REN Centre for Agricultural Research, Hungary; China Agricultural University; Czech Technical University in Prague; Lincoln University; New Bulgarian University; Northwest A&F University; Northwest University; Pensoft Publishers; Spanish National Research Council; University of Lancaster; BOKU University, Vienna; University of Turin; Federal Agency for Water Management, Austria; Andalusian Institute of Agricultural and Fisheries Research and Training (IFAPA)

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