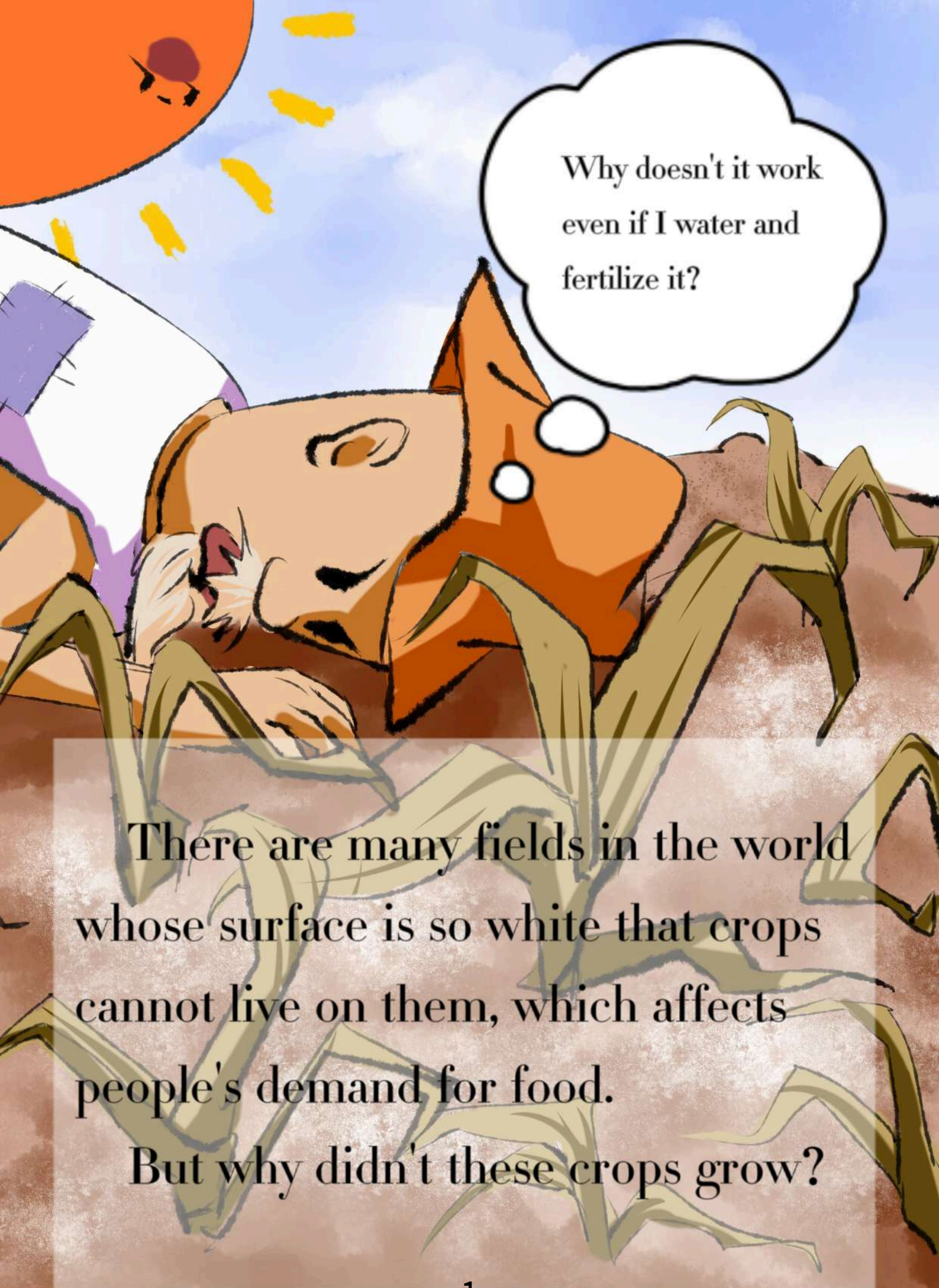
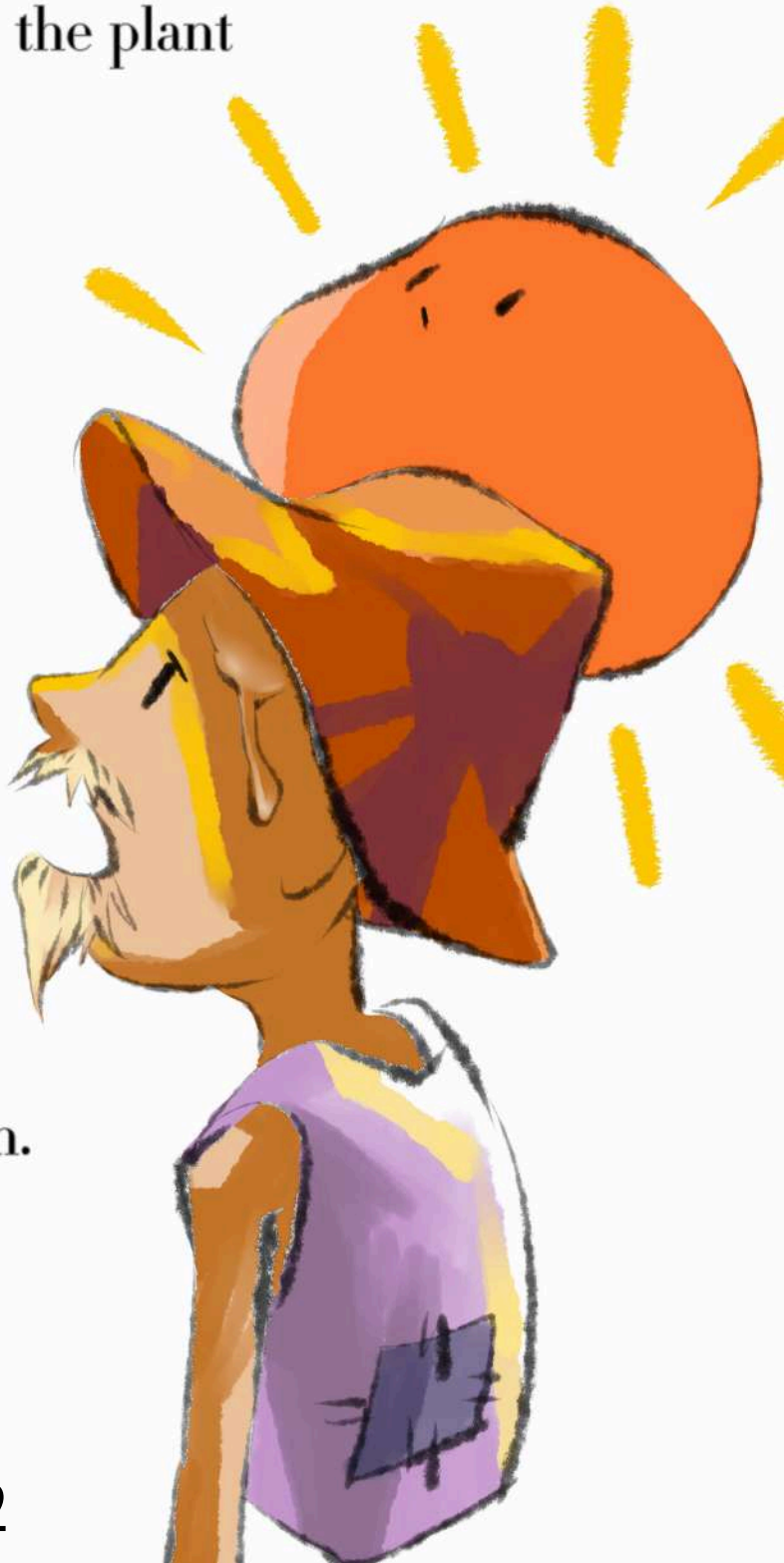
Why can't crops be grown
in the fields?



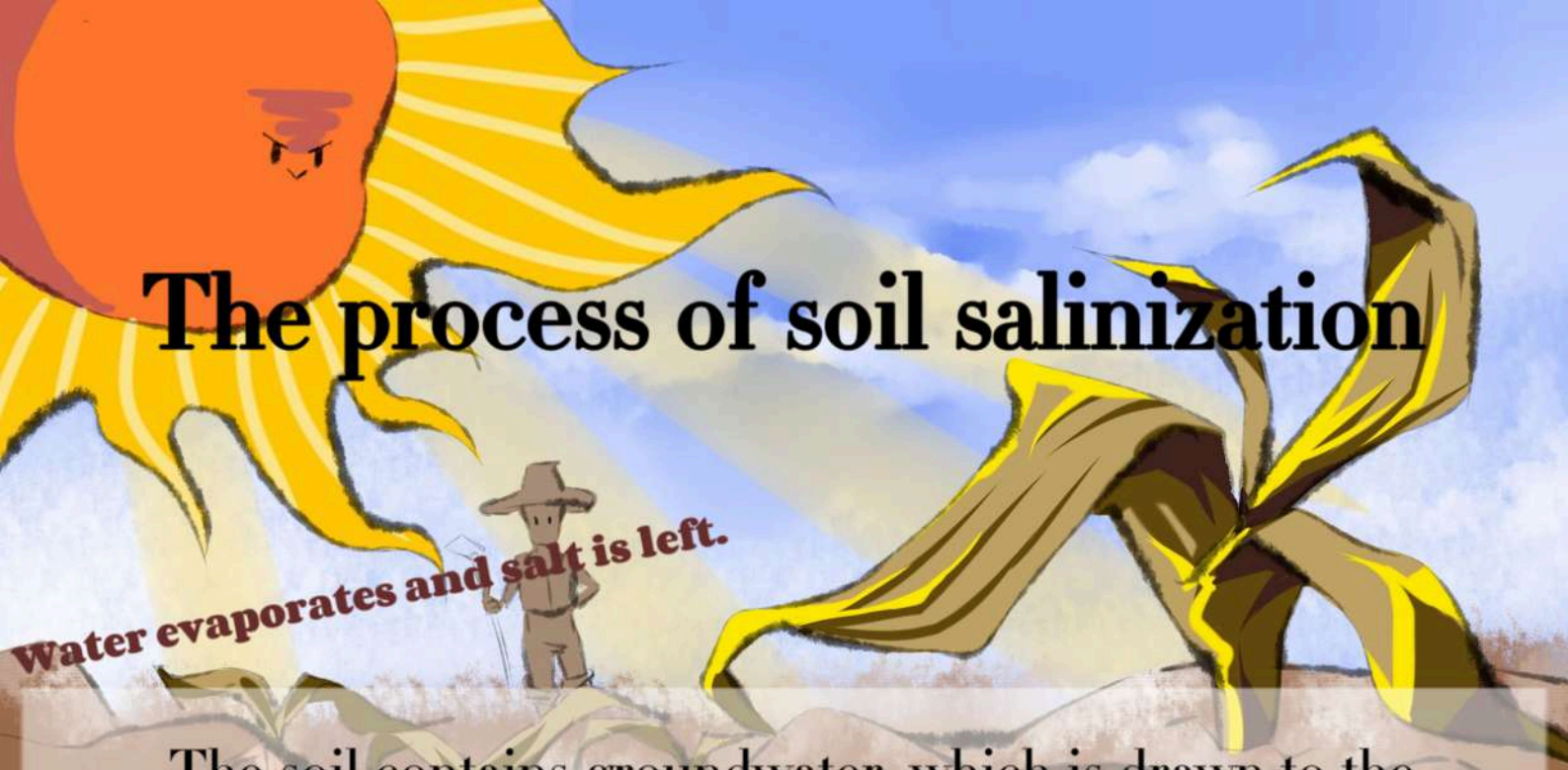
There are many fields in the world whose surface is so white that crops cannot live on them, which affects people's demand for food.

But why didn't these crops grow?

It turns out that these lands are saline-alkal. If the concentration of salts and alkalis is too high in saline-alkali soil, the plant will lose water seriously in saline-alkali soil, resulting in cell death. Just like freshwater fish can't survive in the ocean. The process of forming saline-alkali land is called soil salinization.

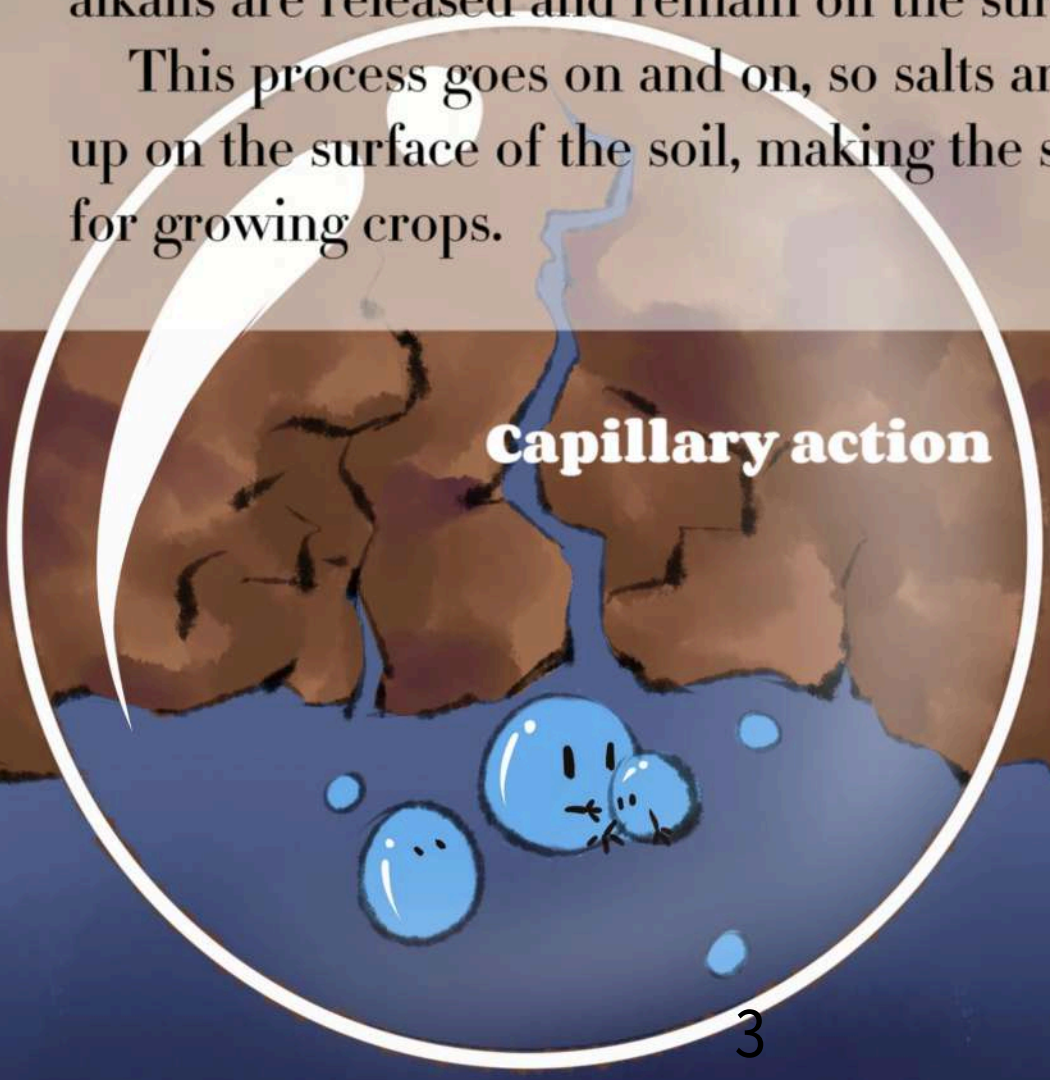


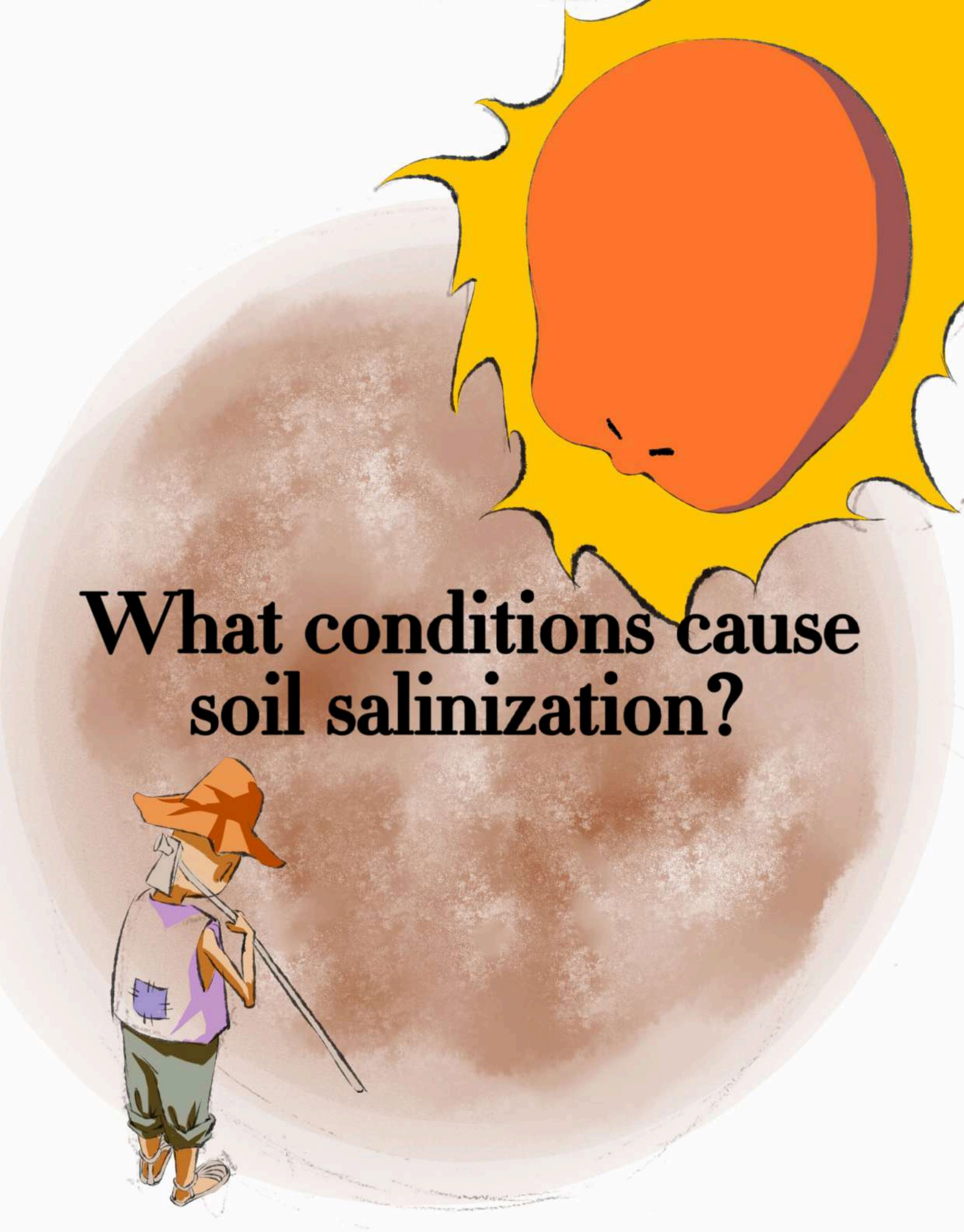
The process of soil salinization



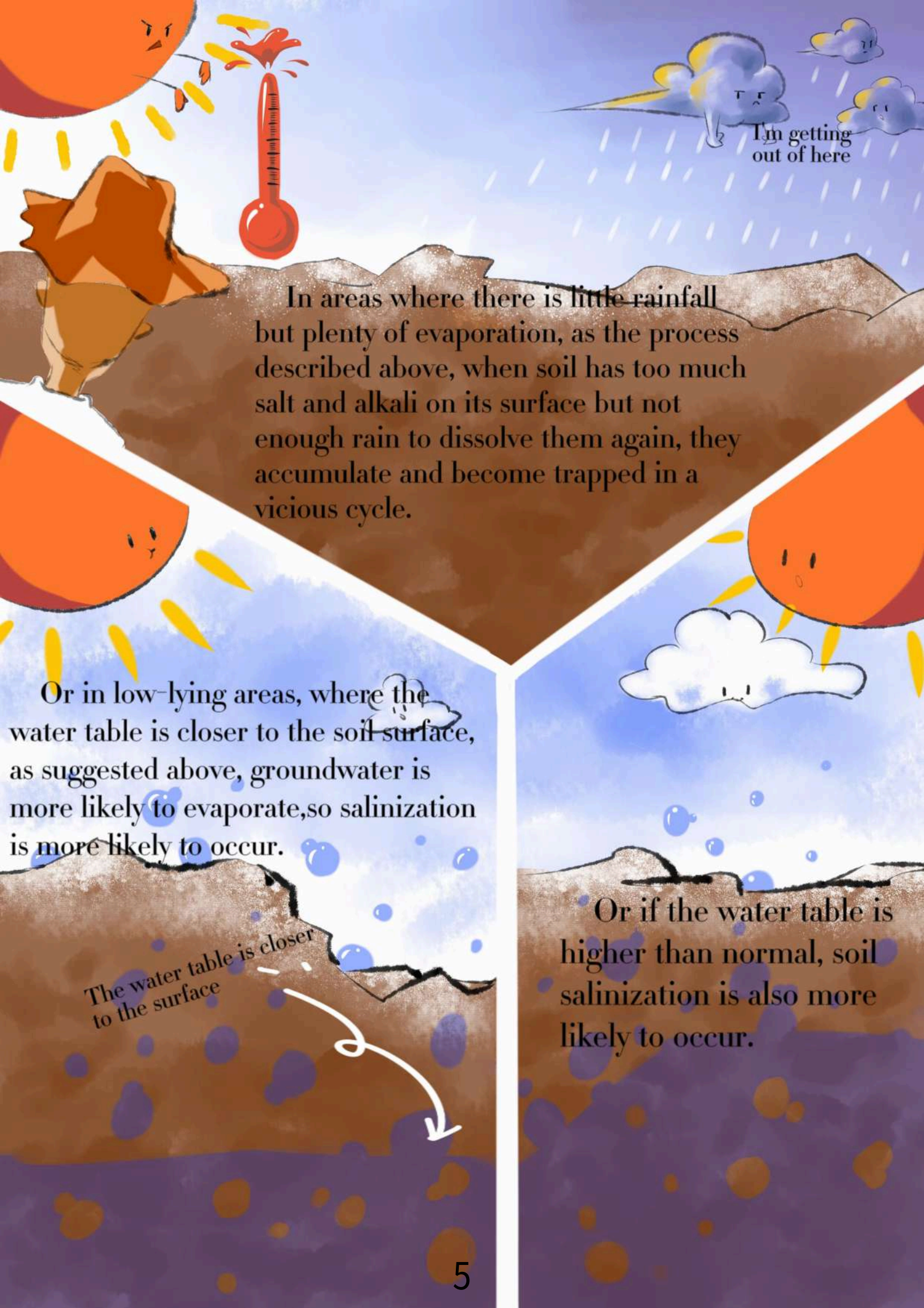
The soil contains groundwater, which is drawn to the surface by capillary action in the soil near the surface. Under high temperatures and strong sunlight, water near the surface evaporates first. Salts and alkalis are contained in water. When water evaporates, salts and alkalis are released and remain on the surface of soil.

This process goes on and on, so salts and alkalis build up on the surface of the soil, making the soil less suitable for growing crops.





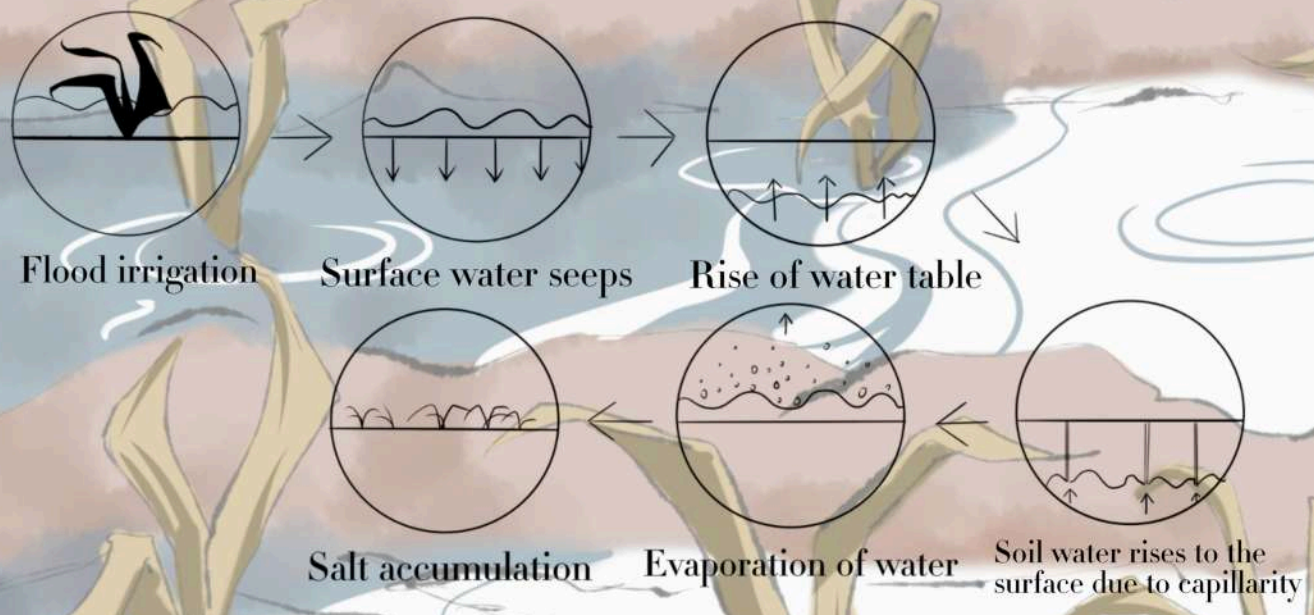
What conditions cause soil salinization?


I'm getting out of here
In areas where there is little rainfall but plenty of evaporation, as the process described above, when soil has too much salt and alkali on its surface but not enough rain to dissolve them again, they accumulate and become trapped in a vicious cycle.
Or in low-lying areas, where the water table is closer to the soil surface, as suggested above, groundwater is more likely to evaporate,so salinization is more likely to occur.
The water table is closer to the surface
Or if the water table is higher than normal, soil salinization is also more likely to occur.

Human Activities

Human activities are also one of the important causes of soil salinization. Unreasonable irrigation measures such as flood irrigation and delayed drainage.

In order to improve the agricultural production, agricultural production in large areas of irrigation, if lack of enough in the process of irrigation and drainage facilities, easy to cause underground water level to rise, makes the soil capillary action to enhance water, stay in the soil, only by evaporation way to persist, making salt accumulation in the soil, soil salinity problem getting worse.



What is our ultimate goal

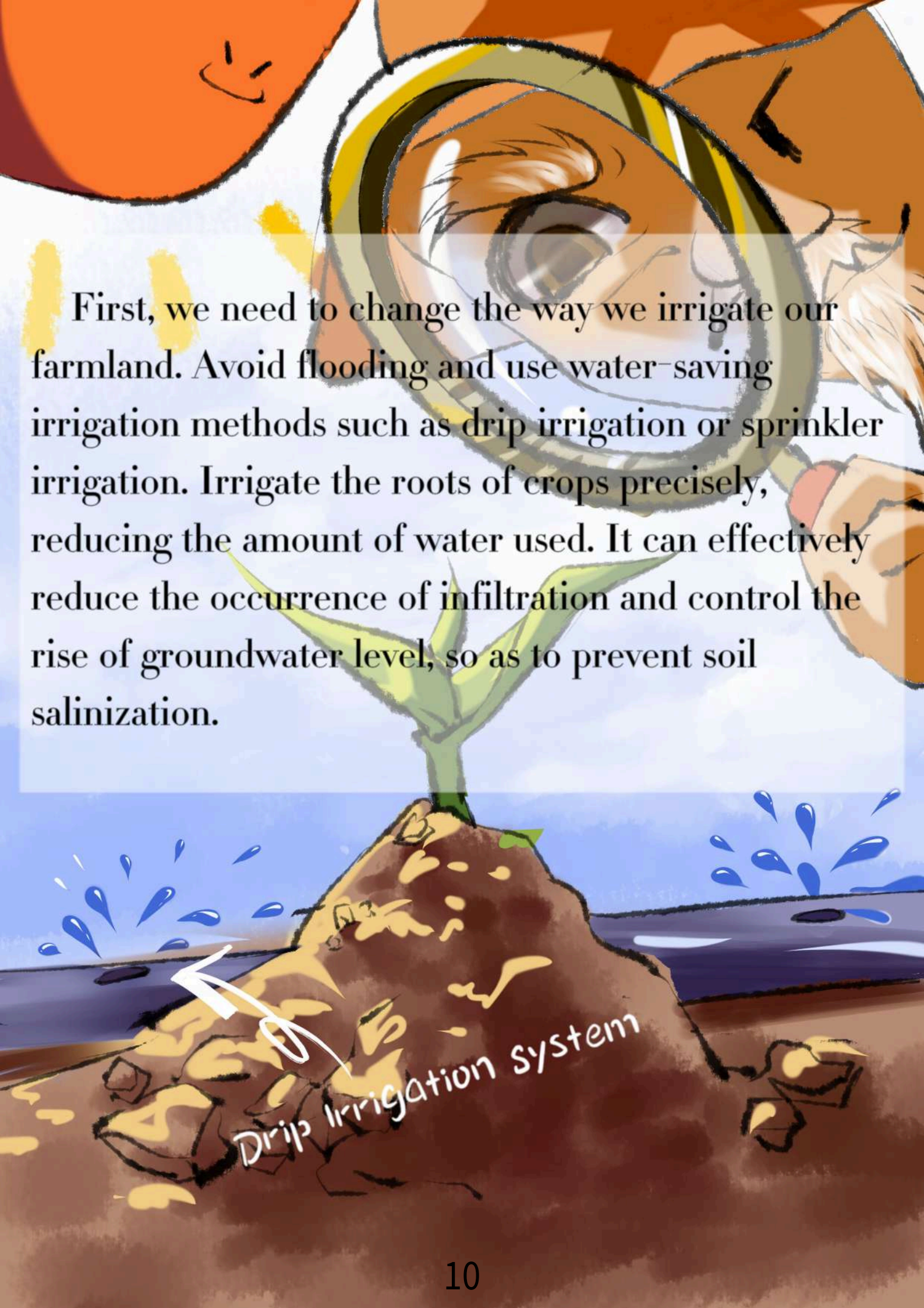
Since soil salinization has such a great impact on the growth of crops and causes serious land waste, we must pay attention to it.

Our ultimate goal is to "Halt soil salinization, Boost soil productivity".

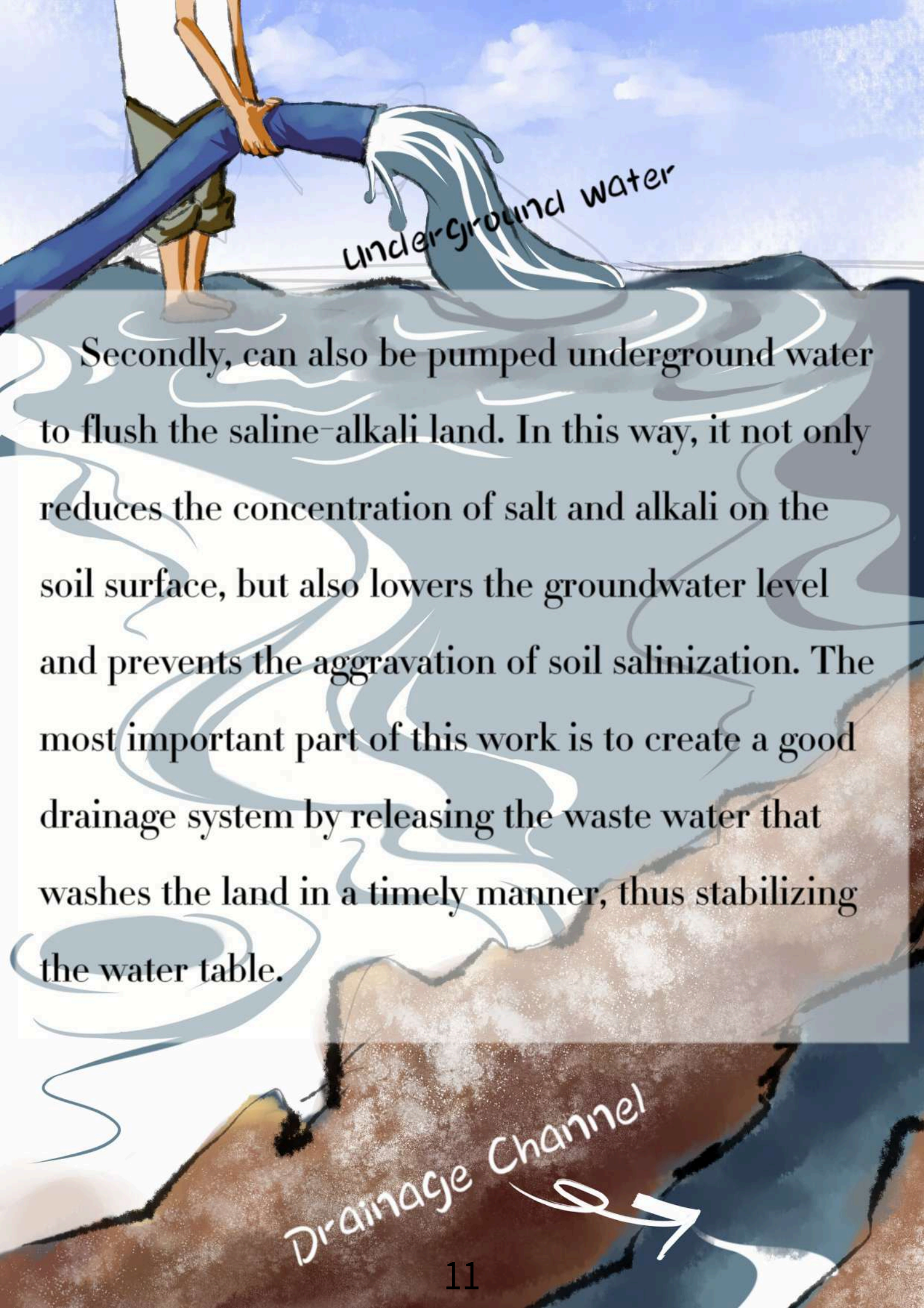
Soil salinization can be stopped by changing irrigation practices, while soil productivity can be improved through fertilization and rational planting.

How to protect and repair soil salinization?

Growing
guide



First, we need to change the way we irrigate our farmland. Avoid flooding and use water-saving irrigation methods such as drip irrigation or sprinkler irrigation. Irrigate the roots of crops precisely, reducing the amount of water used. It can effectively reduce the occurrence of infiltration and control the rise of groundwater level, so as to prevent soil salinization.



Secondly, can also be pumped underground water to flush the saline-alkali land. In this way, it not only reduces the concentration of salt and alkali on the soil surface, but also lowers the groundwater level and prevents the aggravation of soil salinization. The most important part of this work is to create a good drainage system by releasing the waste water that washes the land in a timely manner, thus stabilizing the water table.

Last but not least, biological measures can be used to prevent soil salinization. Afforestation programs control the rise of the water table by absorbing moisture from the soil through transpiration.In addition, trees with high demand for salt can be appropriately selected to increase the consumption of soil salt by plants so as to reduce or control the degree of soil salinization.

- ☑ Poplar tree
- ☑ Pagoda tree
- ☑ Chinese wolfberry tree

After the prevention and treatment of soil salinization, it is necessary to carry out real-time monitoring of soil and groundwater level and adjust the balance of soil salt and alkali in time if we want to continue to develop well.

What can we do

Preventing soil salinization is not just a job for scientists. It requires the efforts of all of us. Through independent innovation, advocacy and action to protect the limited land resources on the earth.

In some parts of the world, poor people still starve to death without enough to eat. Only by working together can we truly prevent and control soil salinization and improve land productivity.