

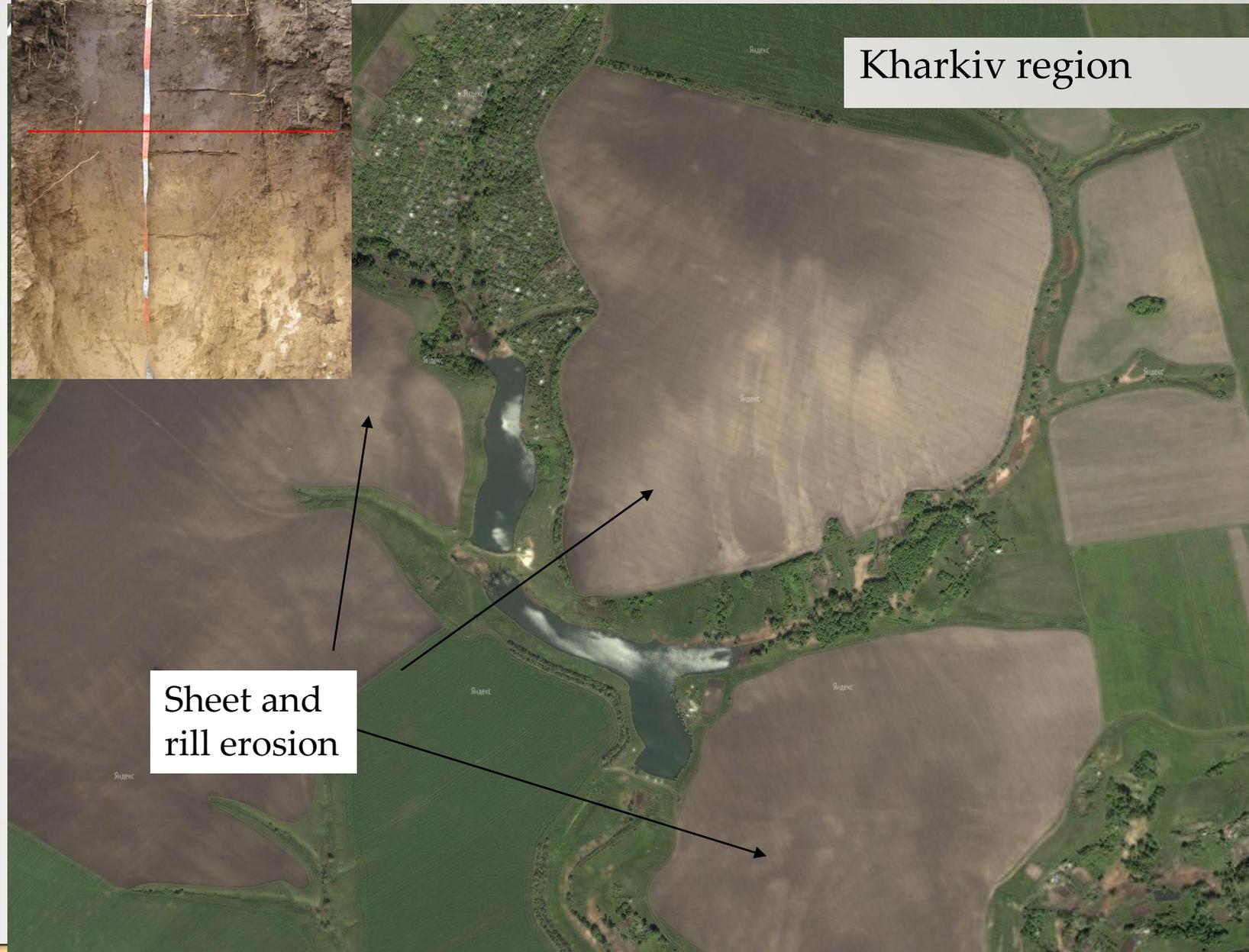


Contour and melioration agriculture in Ukraine

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Soil and erosion

- Soil is the basis of any civilization
- The arability of Ukraine is 54,2 % of its area
- 57,5 % of agriculture soils in Ukraine is eroded



Agrarian firm «Khotiv»
(Kyiv region)



Sheet and
rill erosion

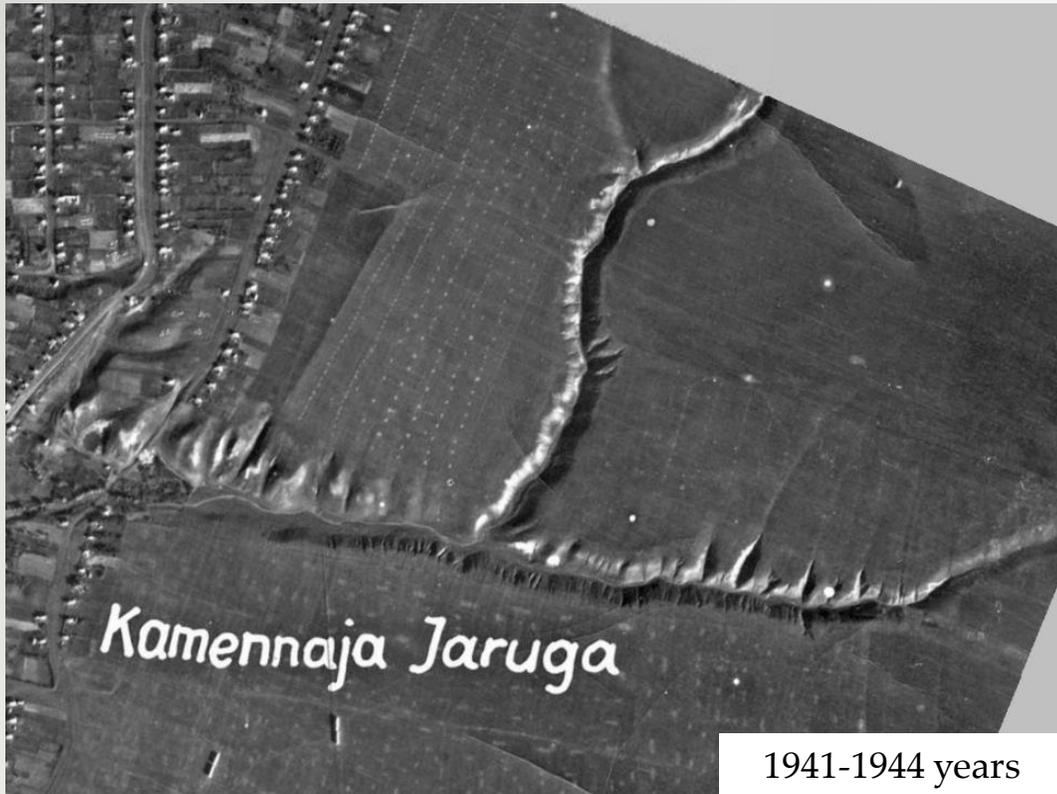


Agrarian firm «Khotiv»
(Kyiv region)



Sheet and
rill erosion

Gully erosion. Kharkiv region



- There is always one main reason of erosion: uncontrolled water flows



Soil protection

1. Standart practice for soil protection

Planning of territory



Result: gully erosion stopped

1941-1944 years



2005-2015 years



1941-1944 pp



Kharkiv region

2005-2015 pp



USA



Ukraine



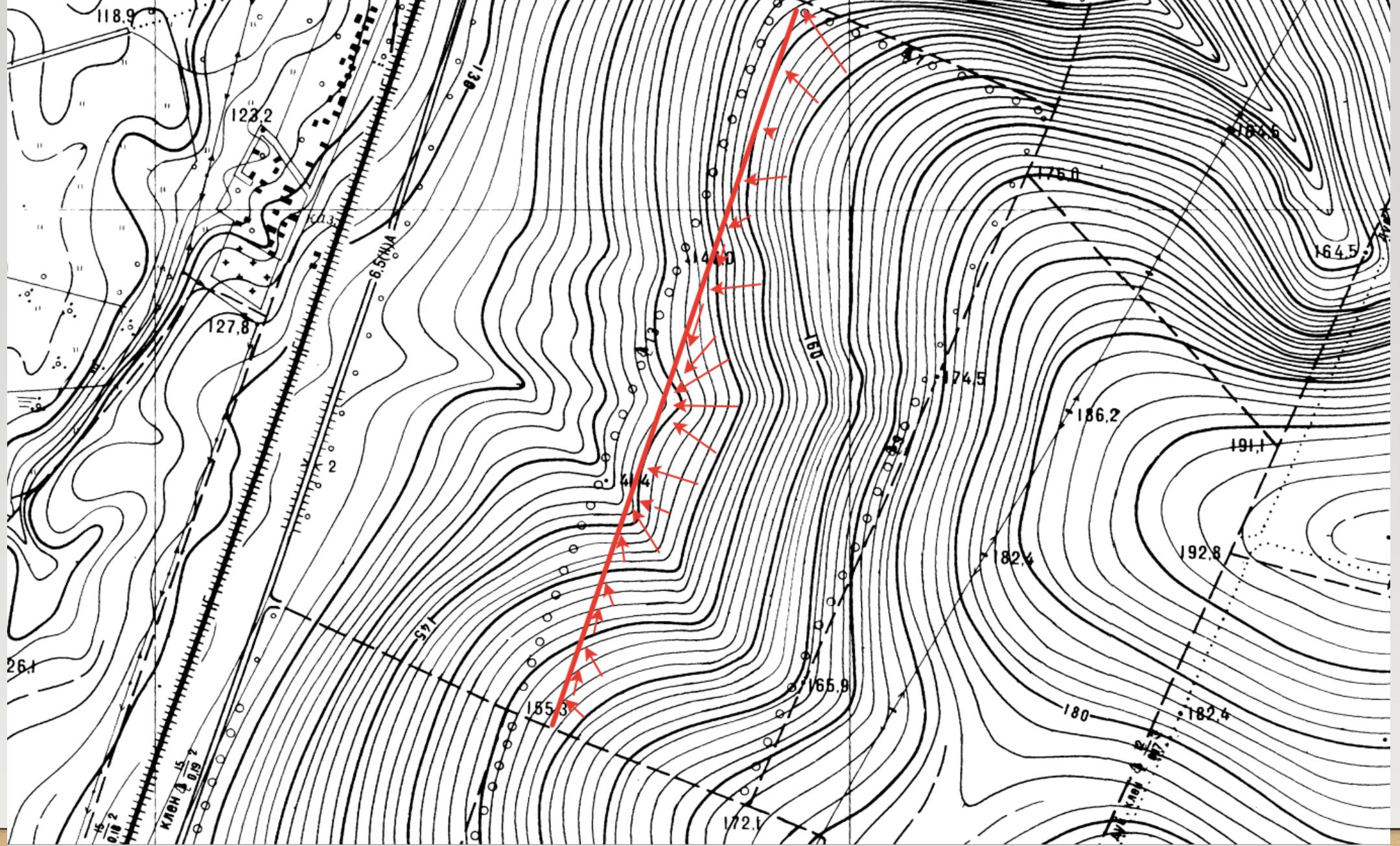
Soil protection

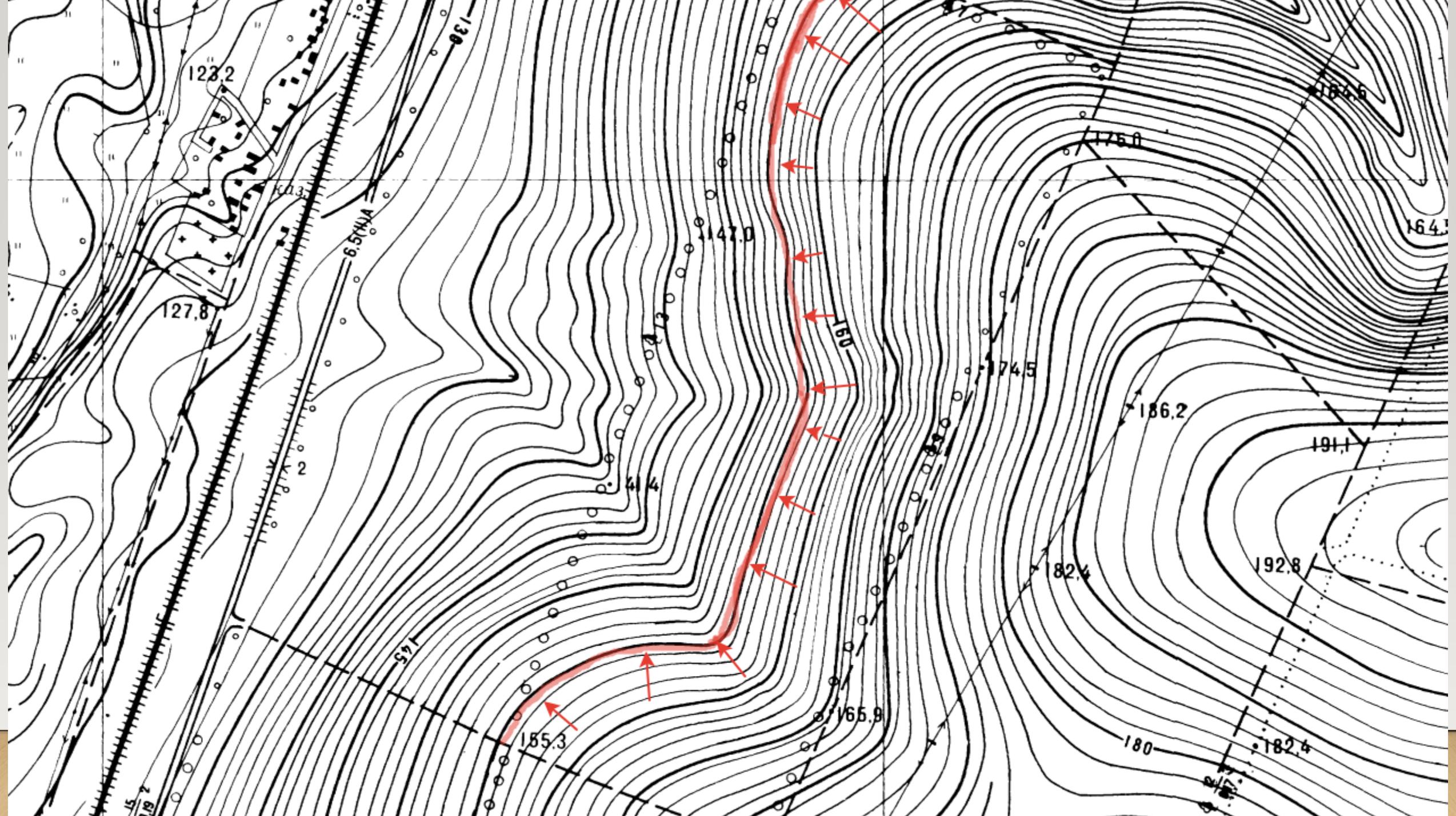
2. Contour and melioration agriculture (CMA)



Contour and melioration agriculture

- design of linear elements of the territory organization or technological operations for soil cultivation, sowing and crop care is carried out along a curve that coincides with the direction of the horizons or has permissible deviations from them





Kharkiv region



Воронцовка

Main principles of CMA

1. Arable land is divided into three ecological and technological groups according to the steepness of the slopes.
2. Fields and plots with curved boundaries are organized so that they fit into the relief.
3. Areas with slopes of more than 7° , where conventional farming is not sustainable due to high soil losses, are removed from the arable land.

Arable land is divided into 3 groups :

1. The first ecological and technological group (ETG) of land with a slope of 0-3°.
 - Intensive crop rotations are organized in which all row crops are concentrated.
 - Compulsory observance of crop rotations
 - Reduction or elimination of perennial grasses
 - Increased use of organic fertilizers to restore soil fertility
2. The second ETG includes land with a slope of 3-7°.
 - Soil conservation crop rotations are organized with perennial grasses and without row crops.
 - Perennial grasses are the most effective soil conservation crops.
 - In addition, dense crops (winter and spring cereals, annual grasses) are grown in rotations.
3. The third ETG covers arable land with a slope of more than 7°.
 - Plots of this land are sown with perennial grasses and removed from arable land.
 - They are converted into artificial hayfields of sown perennial grasses.

Soil protection

3. Transformation arable lands to agrolandscapes (according prof. V. Burakov)

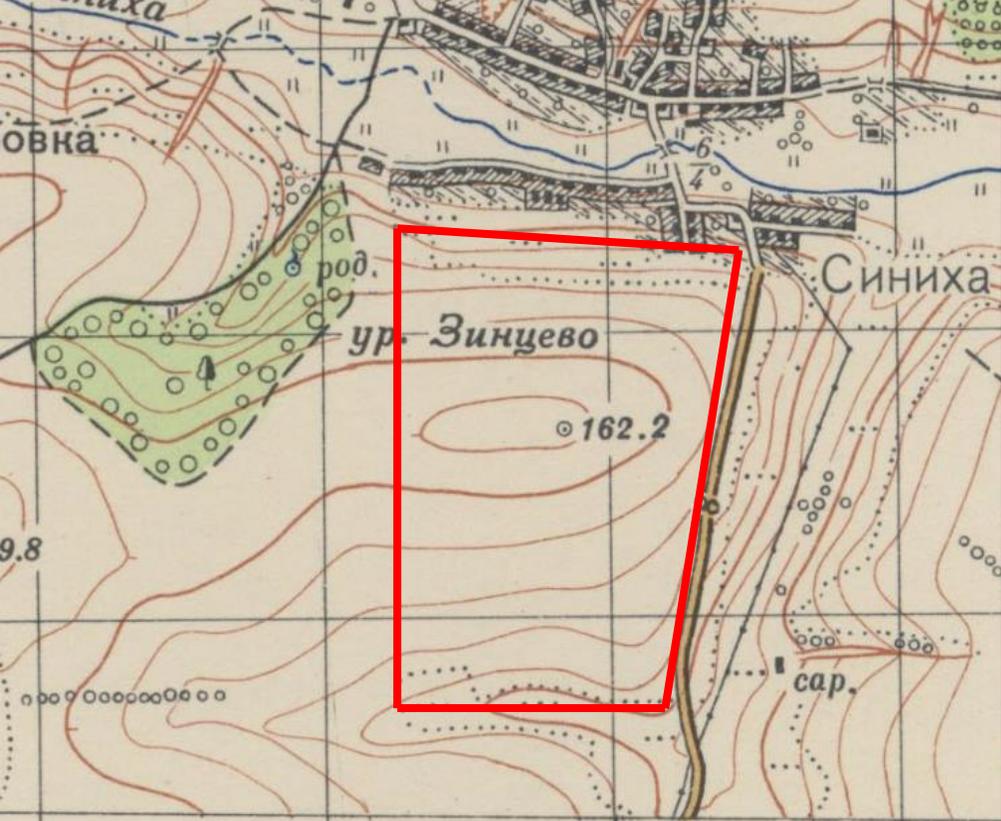


Kharkiv region

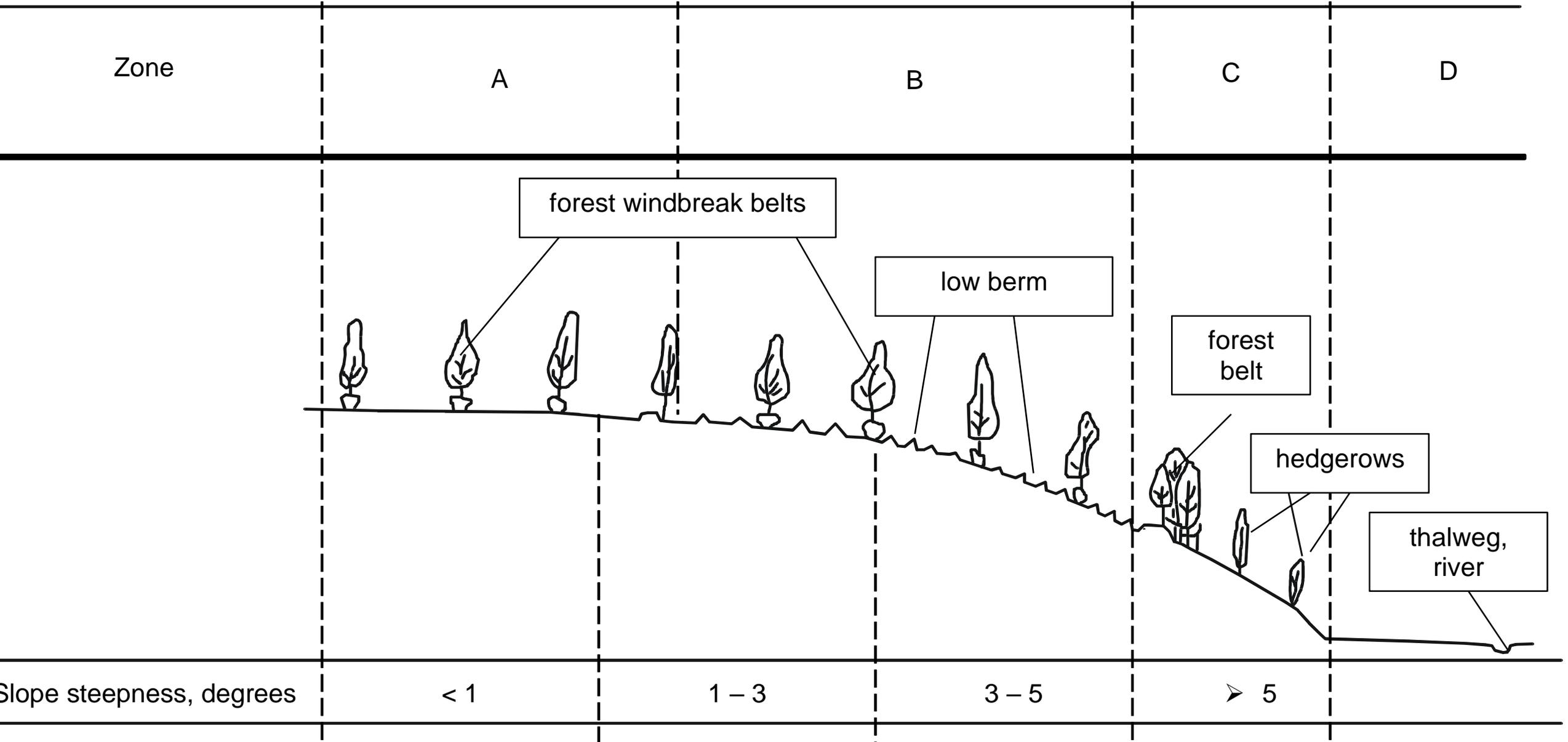
Синиха

Лісна Стінка

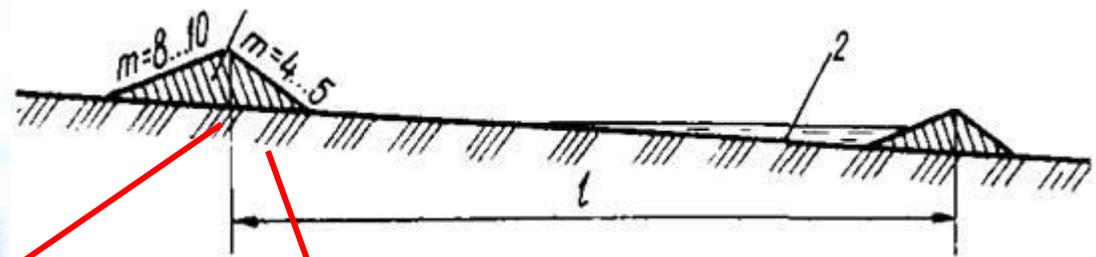




Agrarian firm «Lisna Stinka»
(Kharkiv region)



low berm









- "The most effective measures against erosion and deflation are those that reduce the intensity of their direct agents - surface runoff and wind".
- "Thanks to this, the main channels of water loss from precipitation and soil are blocked, and the saved water can be used by crops".
- "Additional moisture supply to crops for the conditions of Ukraine as a whole can be defined as about 100 - 150 mm/year, which, even with low agricultural technology, will provide an increase in yield of 10 - 15 c/ha in terms of grain".



Thanks for your attention!