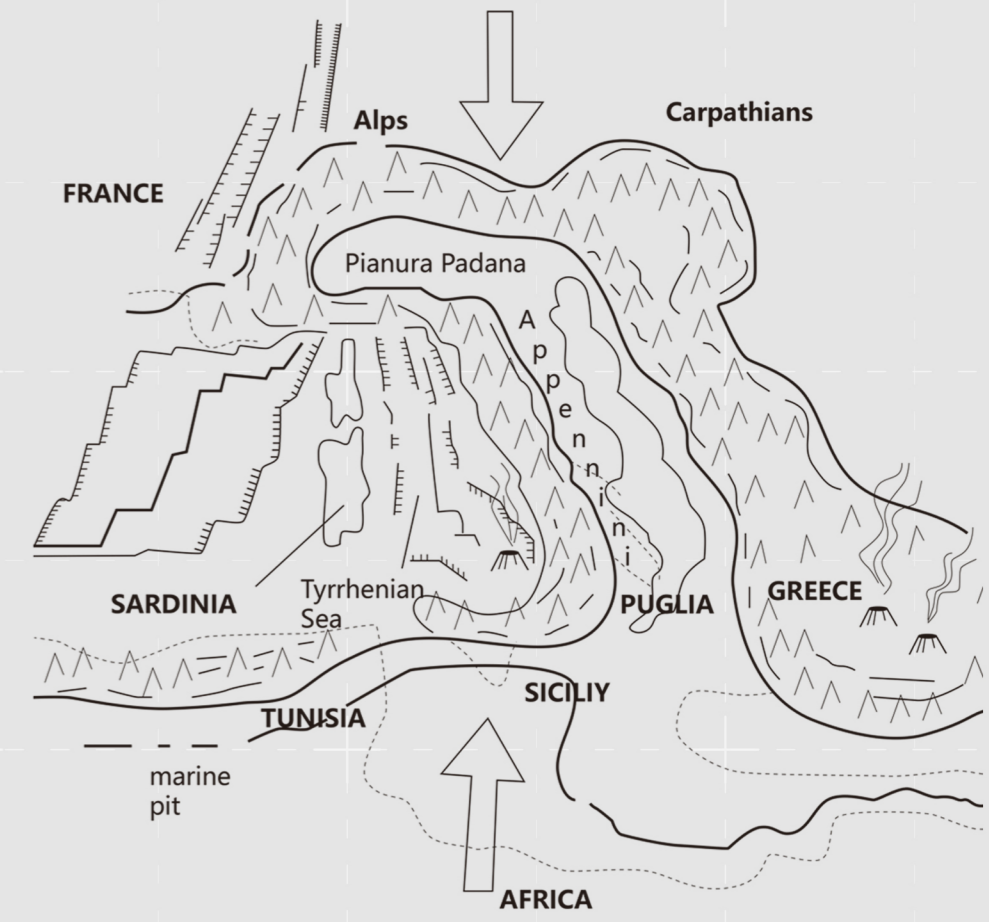


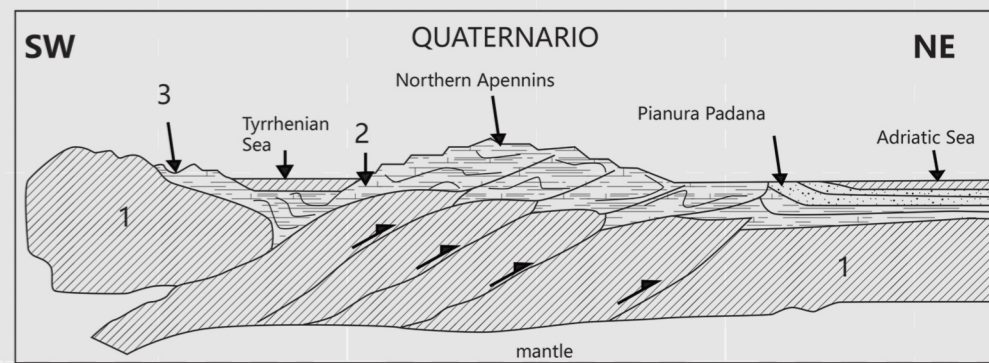
FOLD LANDSCAPE

APPENNINE GENESIS

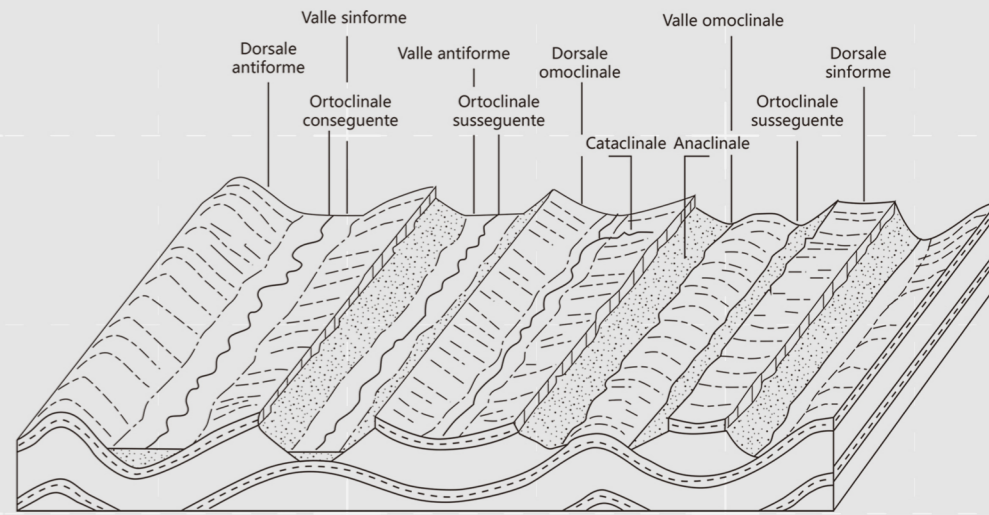
In the Italian territory, the Apennine area is considered the most representative for the study of geological folded landscapes. Starting from 200 million years ago, the movement of the African continental raft and the Eurasian plate, was crucial for the formation of the rocks that currently make up the Apennine chain.



A succession of submarine volcanic eruptions and the sudden solidification of the magmatic material released, in contact with water made basalt and other materials that constituted the oceanic crust, whose continuous expansion increasingly distanced the edges of the continents facing it.



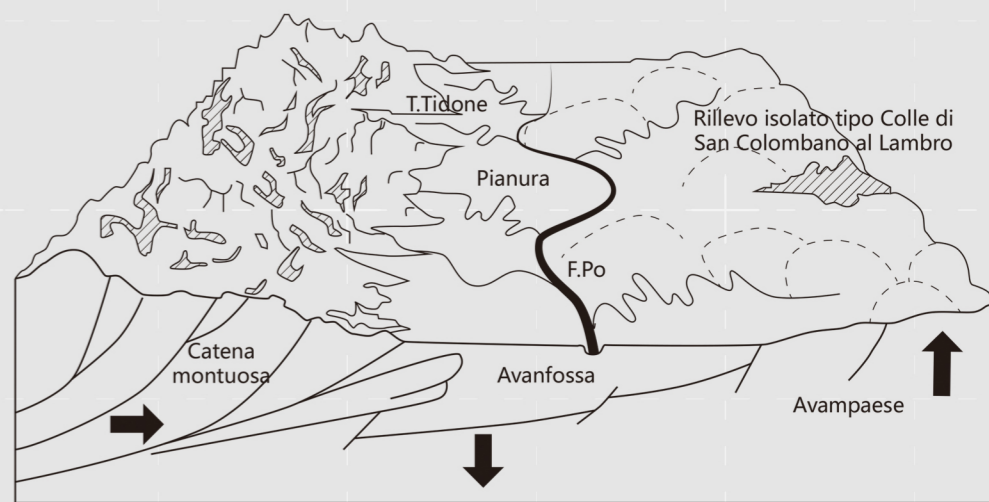
Later, around 90 million years ago, the great African and European continents began to come closer, strongly compressing these materials, which began to sink under the African margin and merge again.



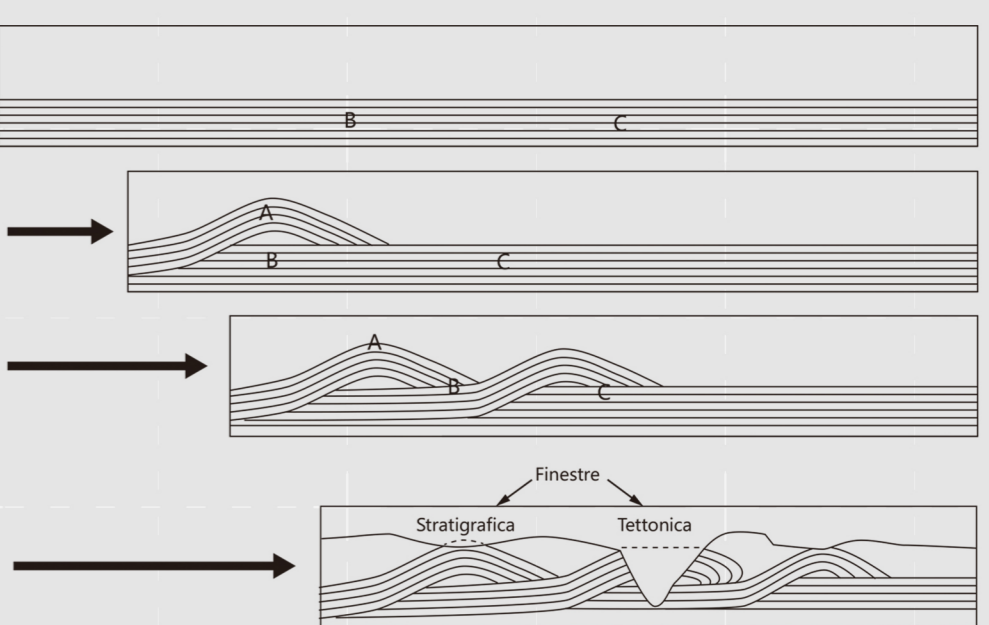
Once all the oceanic crust had been consumed by sinking, the two great continental plates clashed directly (40 My) and the materials deposited on the ocean floor began a long process of overlapping and overthrusting. This meant a translation of several kilometers and the emergence from the sea of the mountain ranges, including the Apennines (20 My), which has a typical pleated structure.

PADANO SEA AND THE VALLEYS

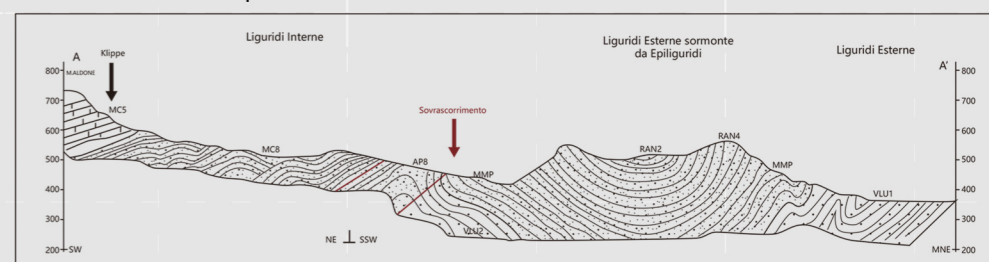
A few million years ago the Piacenza area still sees below sea level the areas that today make up the cultivated plain and hills. In fact, the Alps and the Apennines contained a large gulf of the Adriatic, a rich sea affected by the deposit of sediments, called Mar Padano.



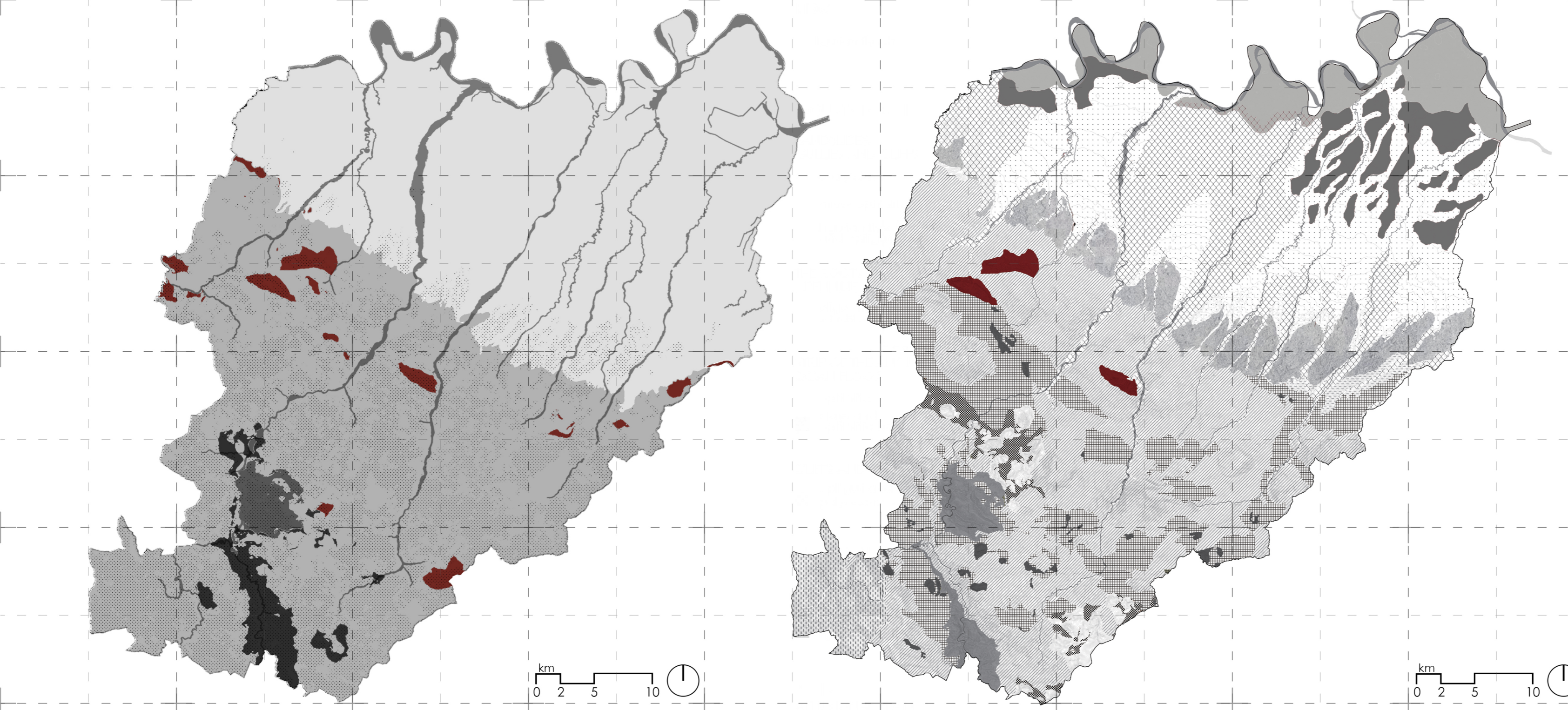
Later, (100 million years ago) the deposit of eroded debris transported to the valley by the watercourses that descend from the emerged mountain reliefs, brought a continuous supply land directly in the sea. In this way over time the volume of the basin was filled, thus forming the Po Valley.



The chronological distribution of the surface units is complicated by the phenomena of bending, faulting and tectonic overlapping (mainly in the mountain sector) and by gravitational and digression and terracing phenomena of alluvial deposits.



The rocks outcropping in the hydrographic basin of the Tidone Torrent have ages between the Mesozoic Era and the Quaternary Era (180 million and 10 thousand years ago). The rhythmic sequences of layers with alternately arenaceous, marly or clayey composition and stratiform bodies (flysch) are particularly widespread.



Geological Domains

On the left side is readable the representation of the different **tectonic domains** (or main geological subdivisions) present in the province of Piacenza, that over time have superimposed on each other in a **disordered way**.
On the right the **geological units**, the different complex of rocks and soils distinguished laterally and vertically from the adjacent ones for one or more characteristics of geological or paleontological order.

Geological units

LANDSLIDES, GULLIES, CLIFFS
scaly clays
minor ophiolites
Ligurian flysch and epiliguri units

STRIP OF THE ANCIENT OCEAN FLOOR
ophiolite
clays and ophiolitic breccias

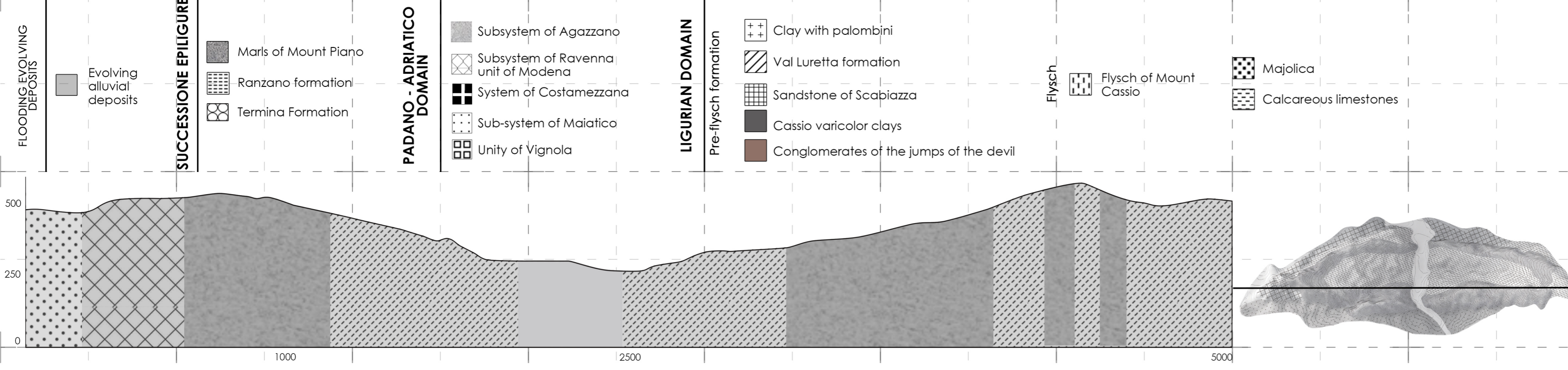
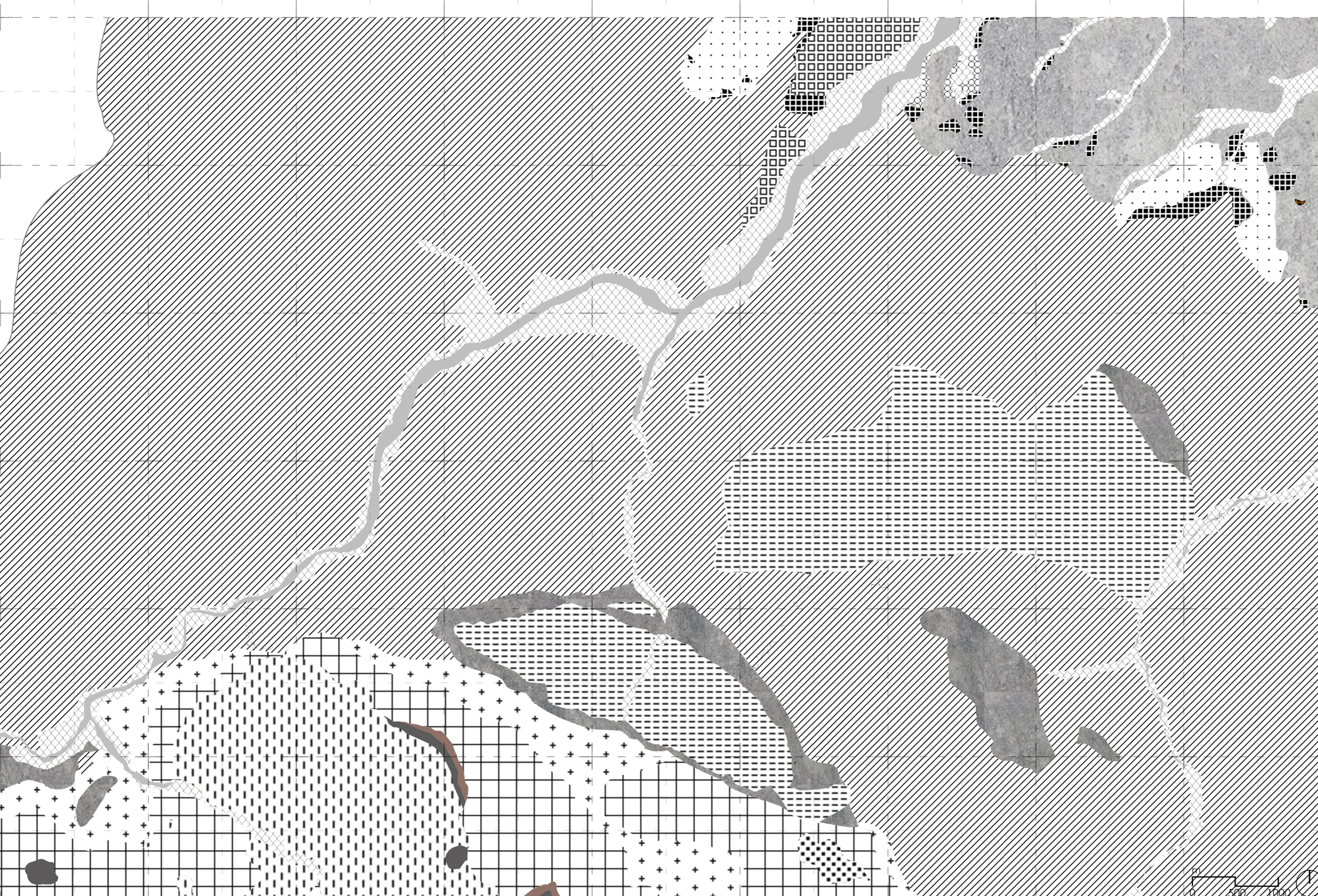
APENNINE ROOTS
oligo-myocene sandstones

CLIFFS AND FOOTHILL
epiliguri and polyocene sandstones

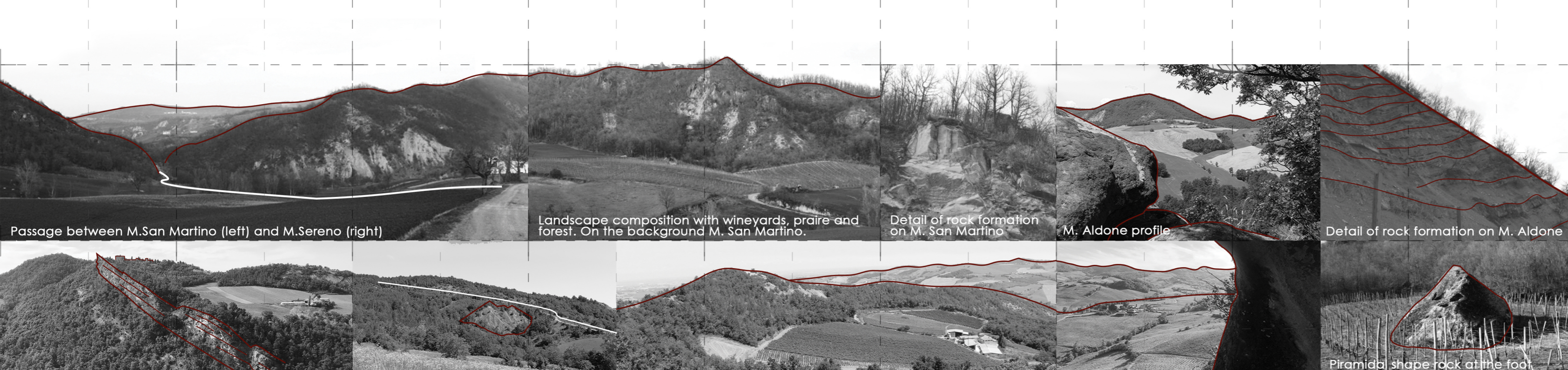
MOUNTAIN & HILL
yellow sand
light blue sand
ligurian flysch

RIDGE HILL & PLAIN
ligurian flysch

ALLUVIONAL PLAIN
Plain and meandering of river Po
Fluvial channel
Embankment, canal and river route
Floodplain



friable sandstones, clay marls, river, rhythmic alternations of limestone and marly clays, rhythmic alternations of clays, marly limestone and marl



Passage between M.San Martino (left) and M.Sereno (right)
Landscape composition with vineyards, prairie and forest. On the background M. San Martino.
Detail of rock formation on M. San Martino.
M. Aldone profile
Detail of rock formation on M. Aldone
Rocca d'Olisio on arenaria rock from M. San Martino.
Calanchi view inside the canoa valley
Inside view of the canoa valley with different vegetation types
View of the canoa valley from a cave
Piramida shape rock at the foot of M. San Martino