6. Ecological predominance of the geomorphology factor

This section addresses soil formation and evolution, highlighting the influence of ecological factors, such as climate and vegetation, on soil genesis. Ecological factors act directly on all living organisms at different stages of their development. Dynamic geomorphology studies the creation and evolution of landforms, emphasizing the interaction between external agents such as water, temperature, and biogenic agents.

Several branches of geomorphology are presented, each focusing on specific factors influencing landforms. These branches include climatic, fluvial, slope, wind, glacial, structural, and coastal geomorphology, as well as biogeomorphological domains, such as biometeorization and fluvial biogeomorphology. Biometeorization explores the impact of microorganisms on landforms, while fluvial biogeomorphology examines the relationships between geomorphological processes and living communities. Finally, this section emphasizes the importance of integrating geomorphological and ecological fields, highlighting the benefits for both fundamental research and environmental management. It concludes by addressing dynamic geomorphology as a discipline that goes beyond observation, employing various measurement methods and modeling techniques to understand erosion processes and landform evolution.
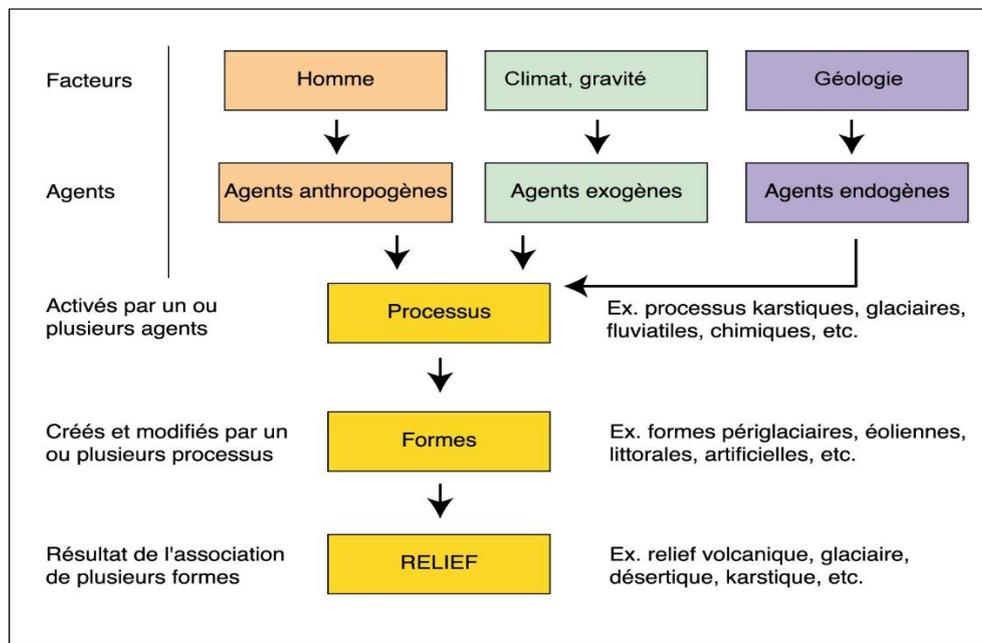

Figure : Key elements of geomorphology

Each geographical region possesses specific morphological characteristics, influenced by climatic factors (humid, arid, and Saharan zones), but also by natural and anthropogenic processes. This diversity is essential for understanding the interactions between geomorphology

and ecosystems, as it shows how the Earth's physical structure impacts ecological dynamics and morphogenesis. In short, this overview of geomorphological and climatic themes reveals the crucial importance of these factors in the distribution of landforms and their evolution, as well as in the balance of ecosystems.