Exercise 8:

Sampling design

Aim:

- To design a sampling scheme i) satisfying spatial representativeness, ii) maximizing environmental contrast between locations, iii) financially realistic, iv) securing a minimal statistical power (sufficient number of individuals)

INTRODUCTION

Landscape genomics studies require a carefully designed strategy for data collection. The choice of the sampling strategy determines the confidence and power of the results of the subsequent analyses.

EXERCISE

You have to design a sampling scheme for a landscape genomics analysis on goat breeds distributed across Kenya (whole country).

- You have funding to sample 400 individuals.
- You have a set of environmental variables available (download data corresponding to exercise 8).
- Available is also a regular grid over the country of 50x50km. The mean of each Bioclim variable within the cells of the grid is also available.

1. Indicate the best locations where individuals will be sampled, and tell how many individuals per site will be sampled, and argue why.
2. Create a map of Kenya in QGIS to illustrate your sampling design.
3. Orally present your solution to the rest of the class (use the beamer to present your solution).