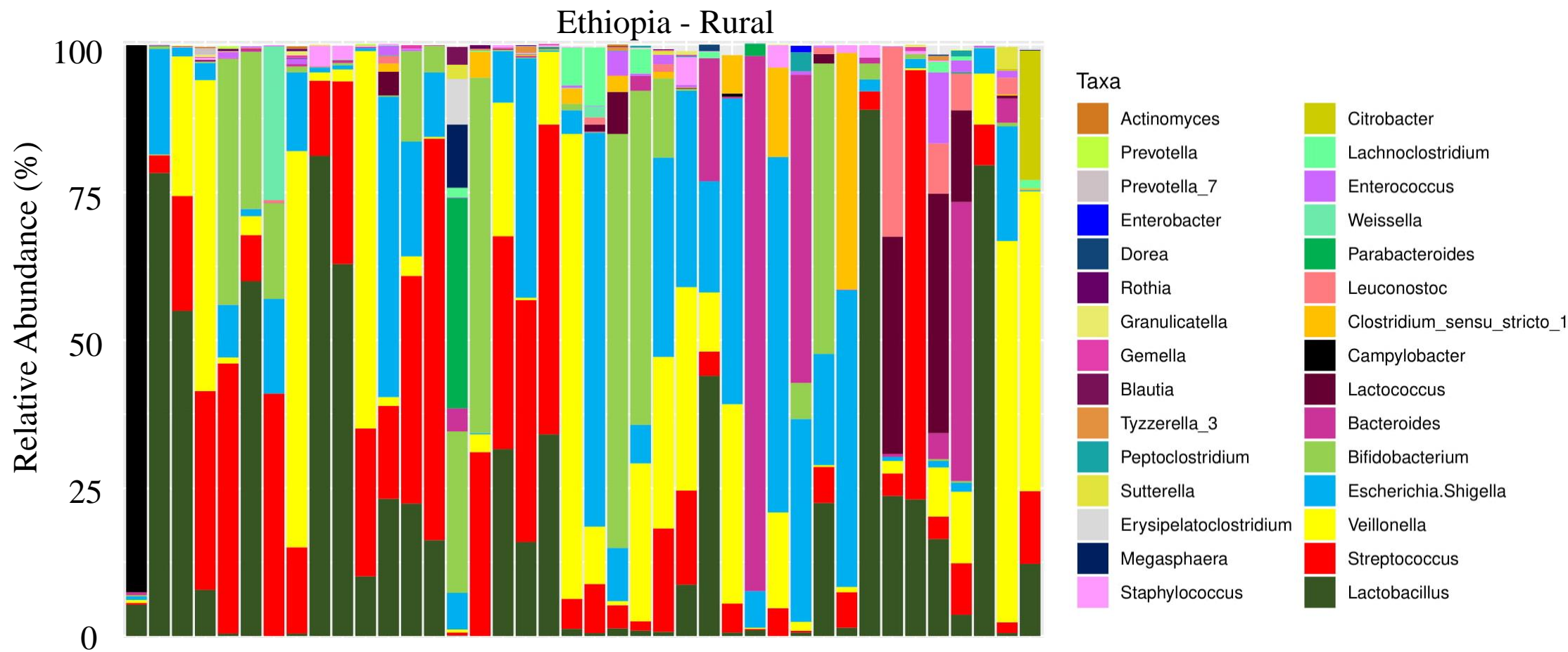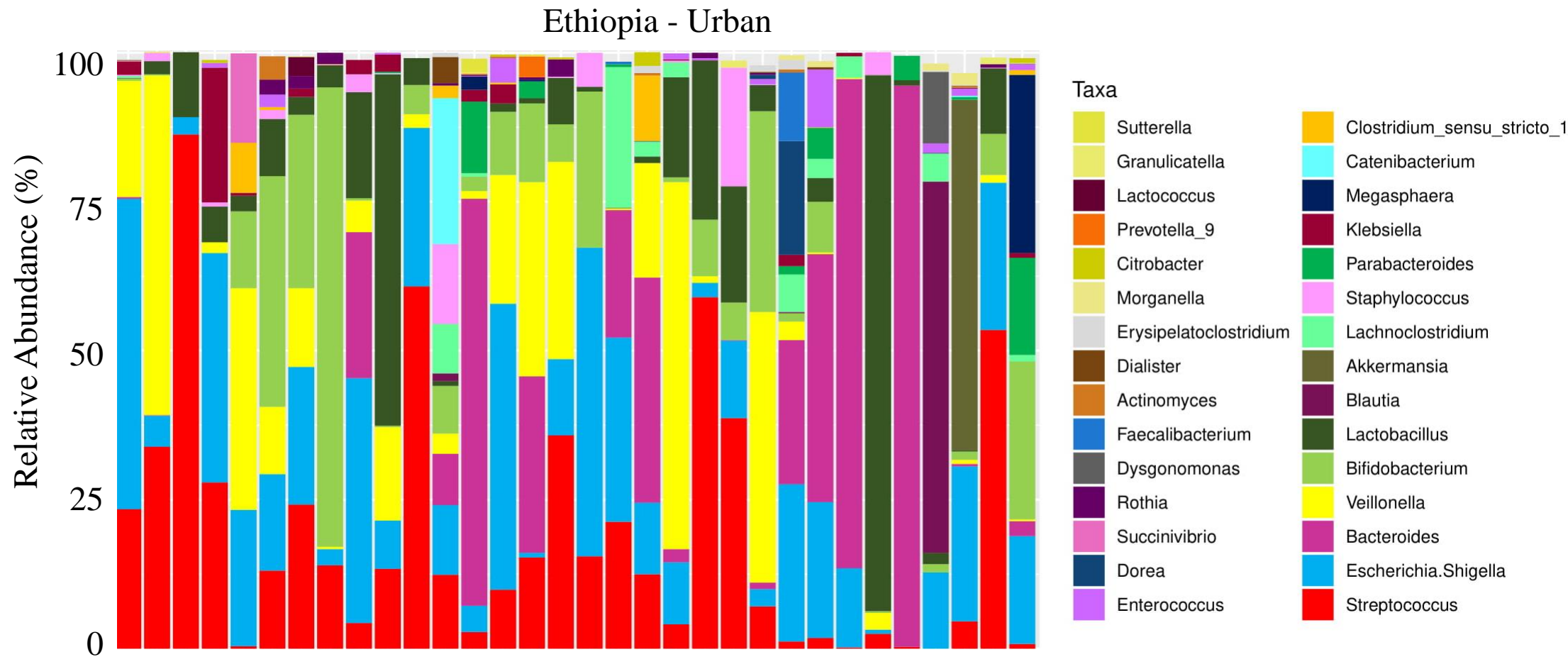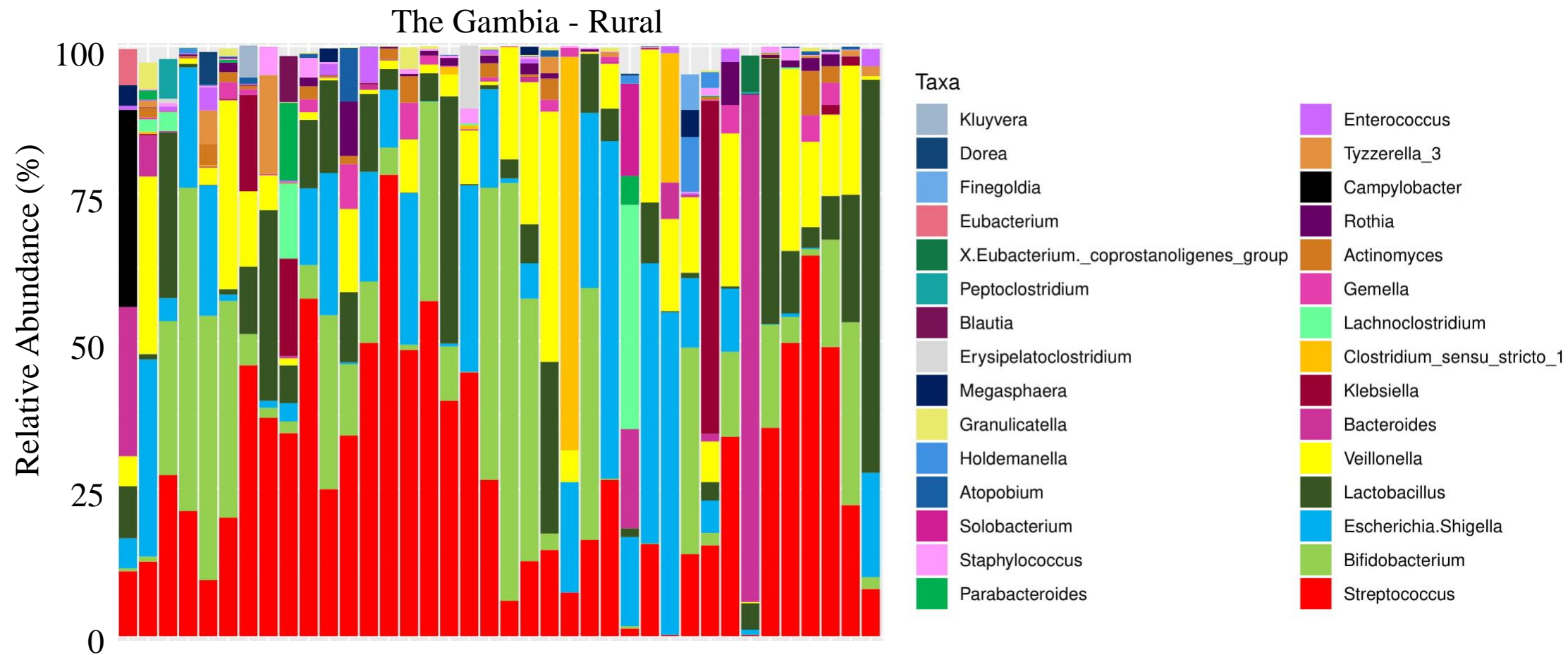**Supplementary Figure 1**. Relative abundance of the 30 most-abundant genera in infant fecal samples (*n* = 40) collected in rural Ethiopia. Each bar represents a single sample.



Ethiopia - Rural

Taxa

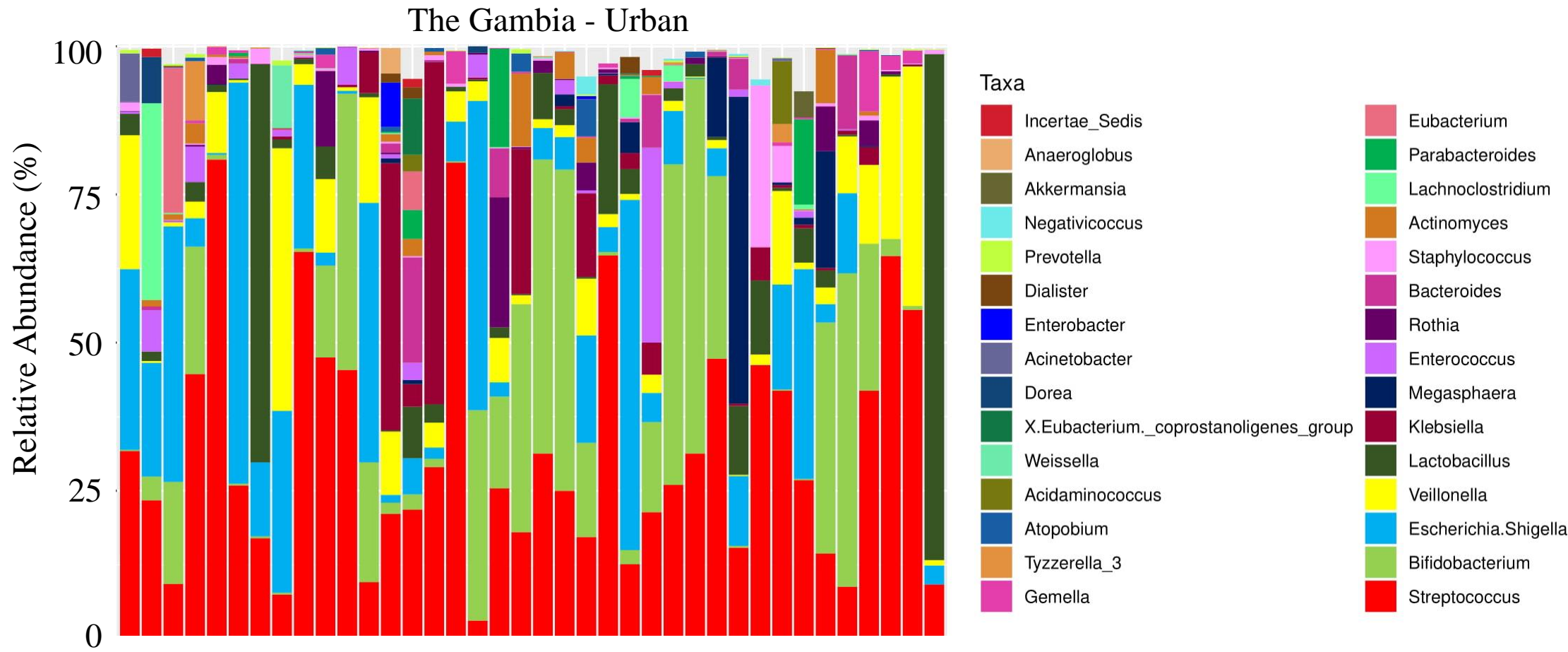| | |
|---|---|
| Actinomyces | Citrobacter |
| Prevotella | Lachnoclostridium |
| Prevotella_7 | Enterococcus |
| Enterobacter | Weissella |
| Dorea | Parabacteroides |
| Rothia | Leuconostoc |
| Granulicatella | Clostridium_sensu_stricto_1 |
| Gemella | Campylobacter |
| Blautia | Lactococcus |
| Tyzzerella_3 | Bacteroides |
| Peptoclostridium | Bifidobacterium |
| Sutterella | Escherichia.Shigella |
| Erysipelatoclostridium | Veillonella |
| Megasphaera | Streptococcus |
| Staphylococcus | Lactobacillus |

**Supplementary Figure 2**. Relative abundance of the 30 most-abundant genera in infant fecal samples (*n* = 32) collected in urban Ethiopia. Each bar represents a single sample.
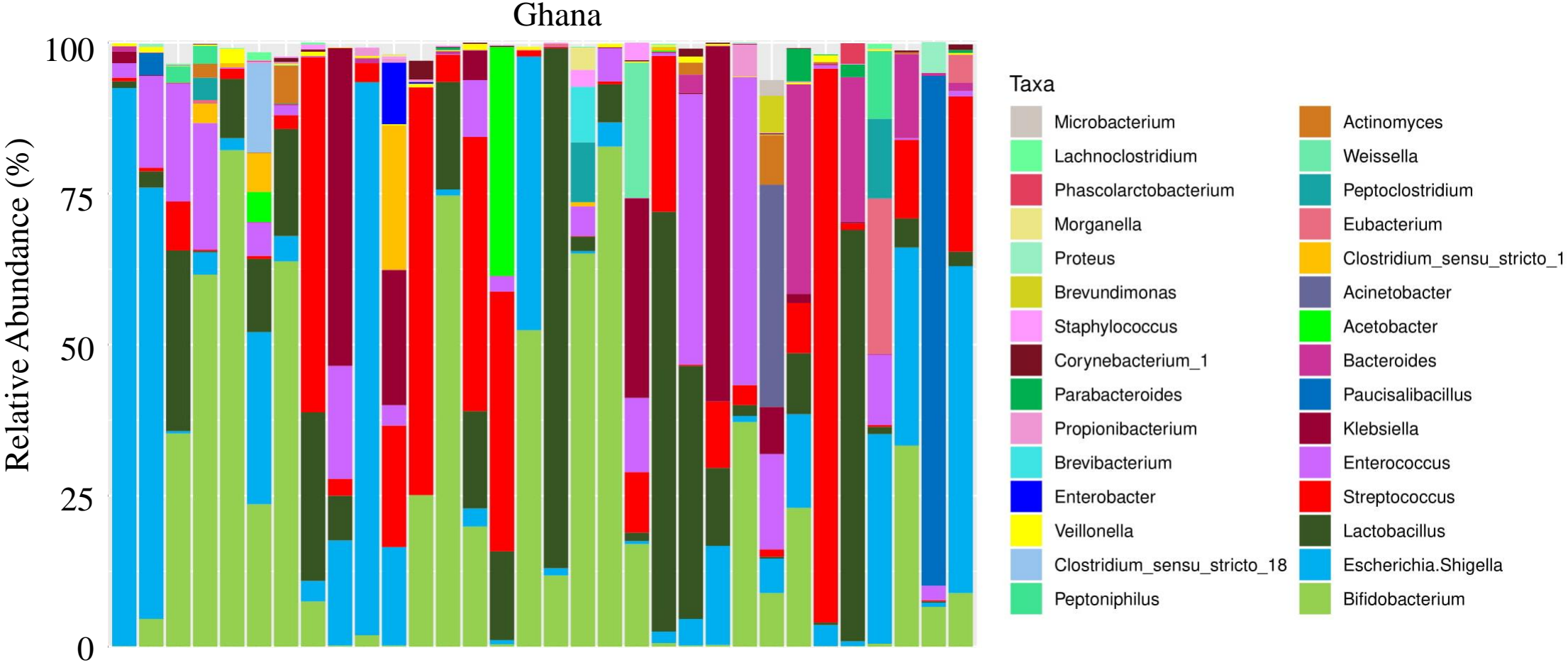
**Supplementary Figure 3**. Relative abundance of the 30 most-abundant genera in infant fecal samples (*n* = 38) collected in rural Gambia. Each bar represents a single sample.
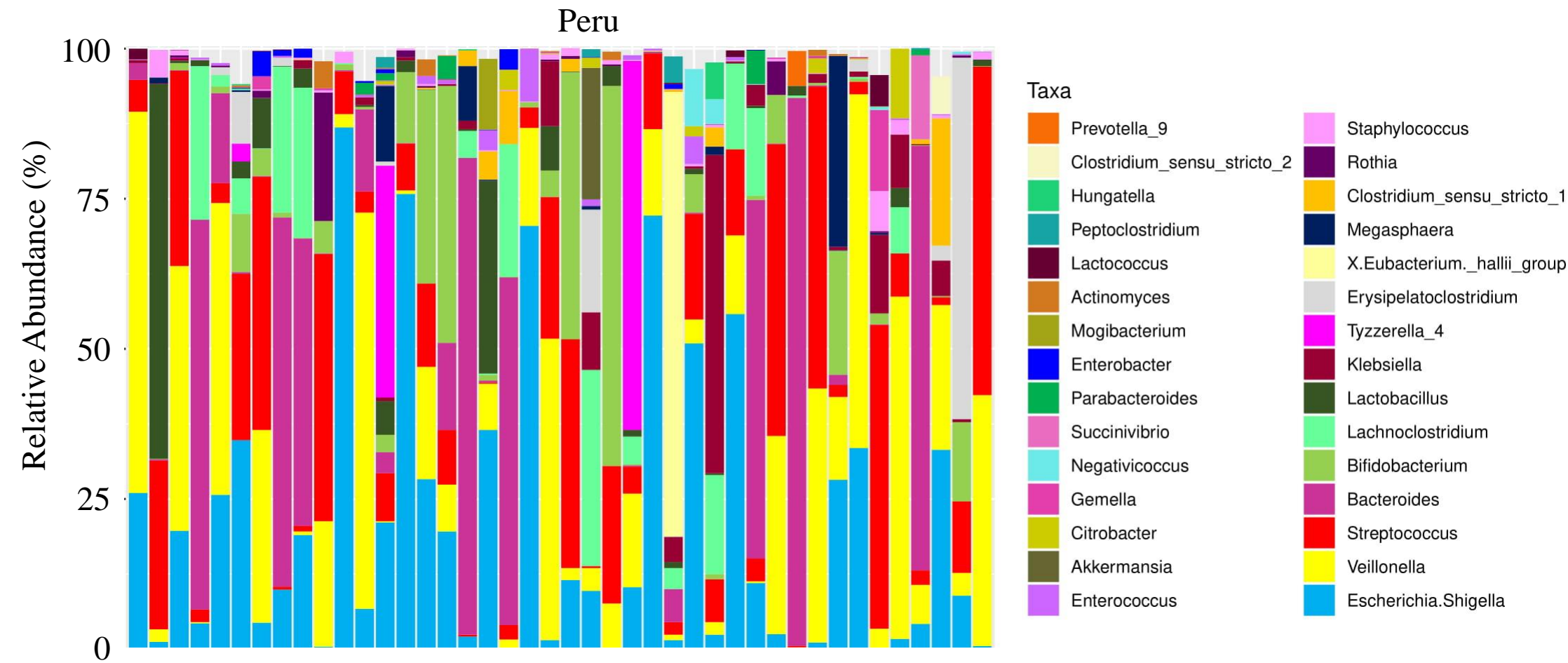


The Gambia - Rural

**Supplementary Figure 4**. Relative abundance of the 30 most-abundant genera in infant fecal samples (*n* = 38) collected in urban Gambia. Each bar represents a single sample.
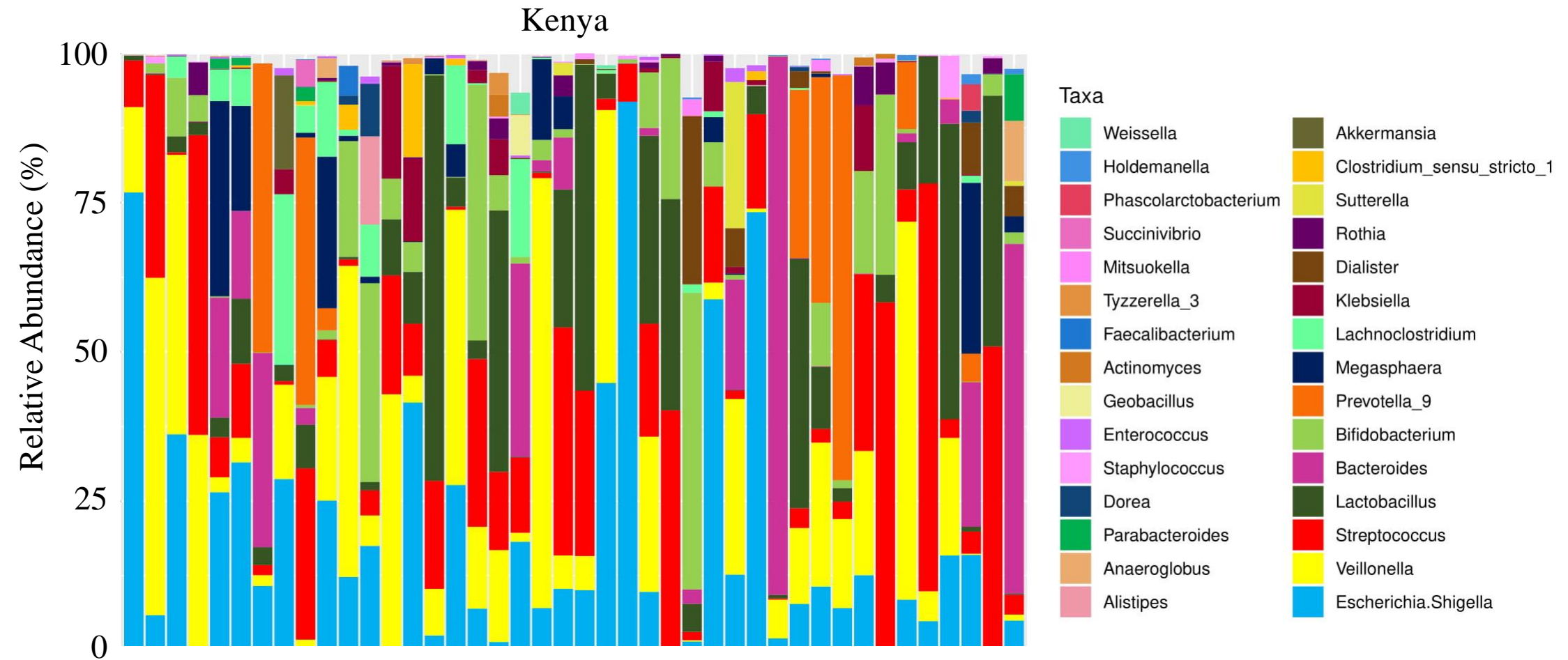
**Supplementary Figure 5**. Relative abundance of the 30 most-abundant genera in infant fecal samples ($n = 32$) collected in Ghana. Each bar represents a single sample.
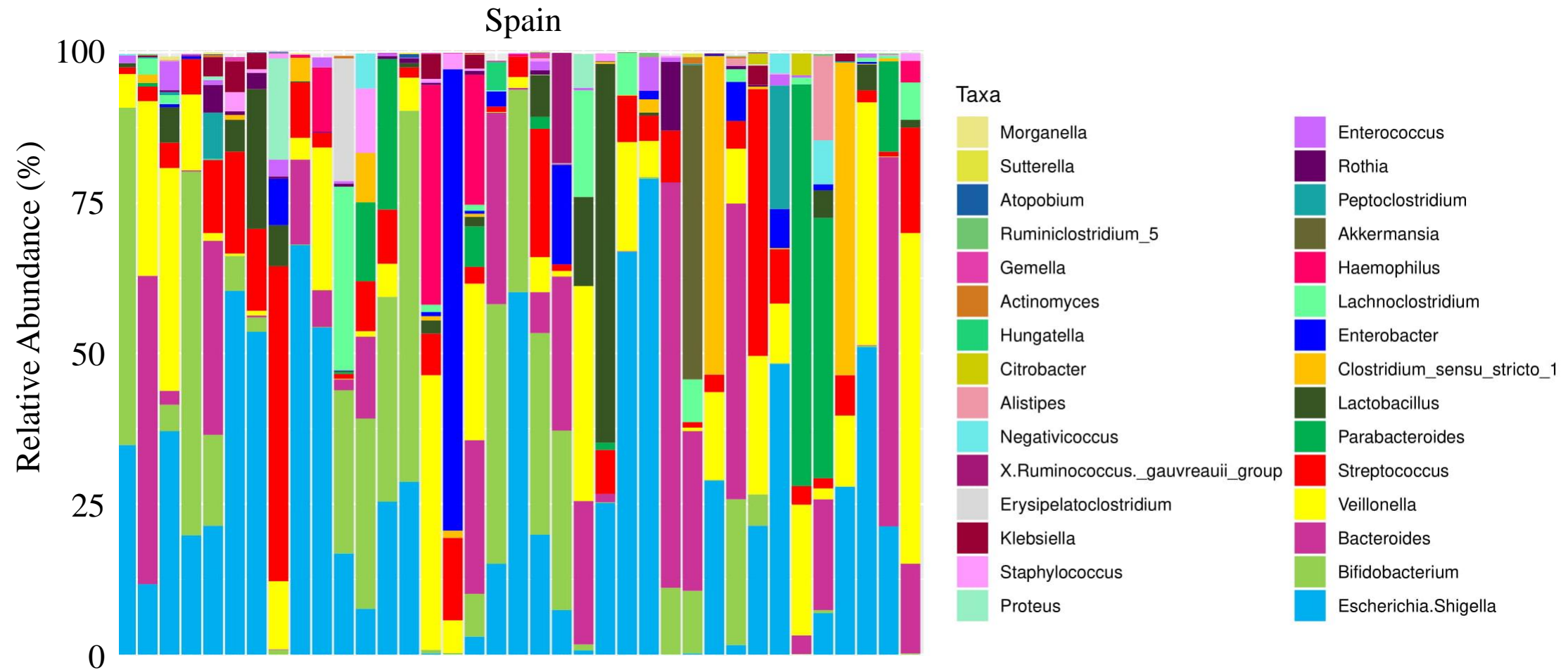
**Supplementary Figure 6**. Relative abundance of the 30 most-abundant genera in infant fecal samples (*n* = 42) collected in Peru. Each bar represents a single sample.
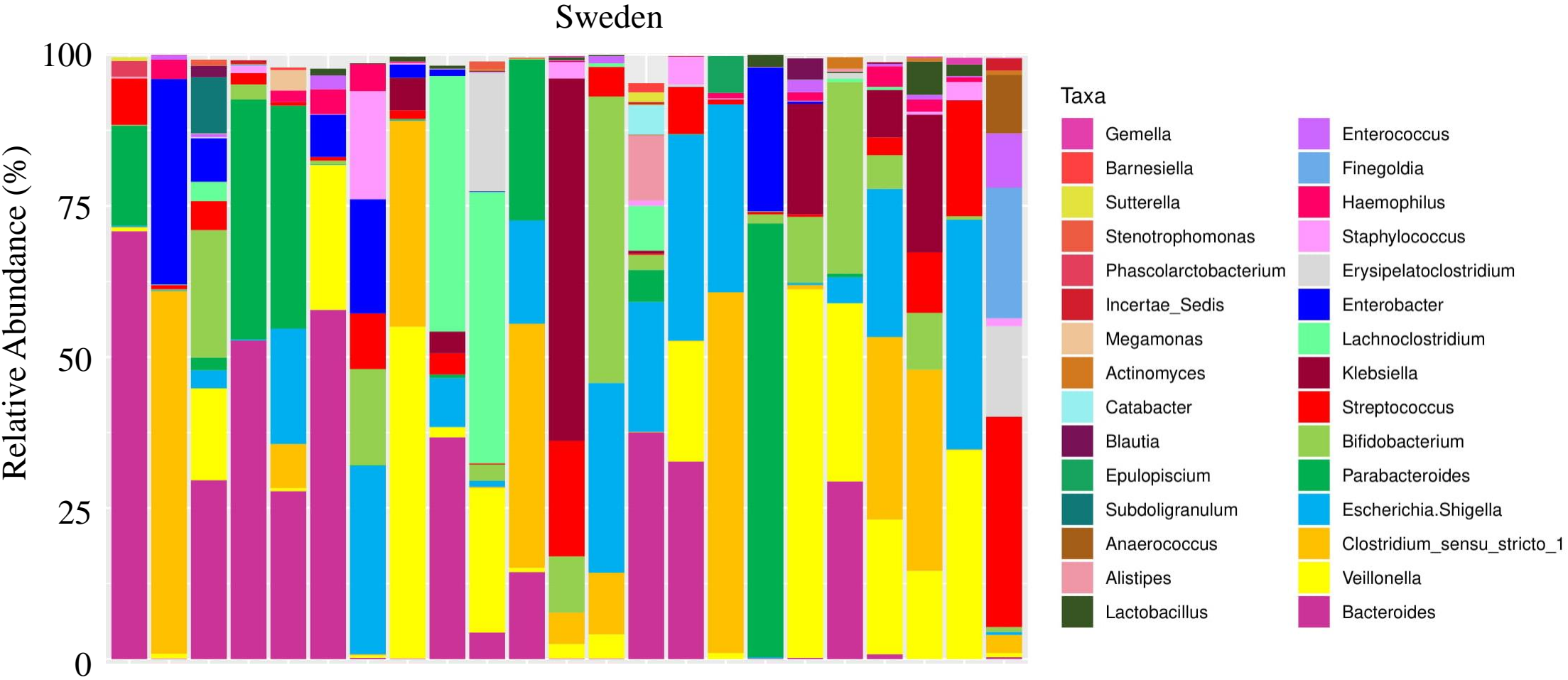
**Supplementary Figure 7**. Relative abundance of the 30 most-abundant genera in infant fecal samples (*n* = 42) collected in Kenya. Each bar represents a single sample.
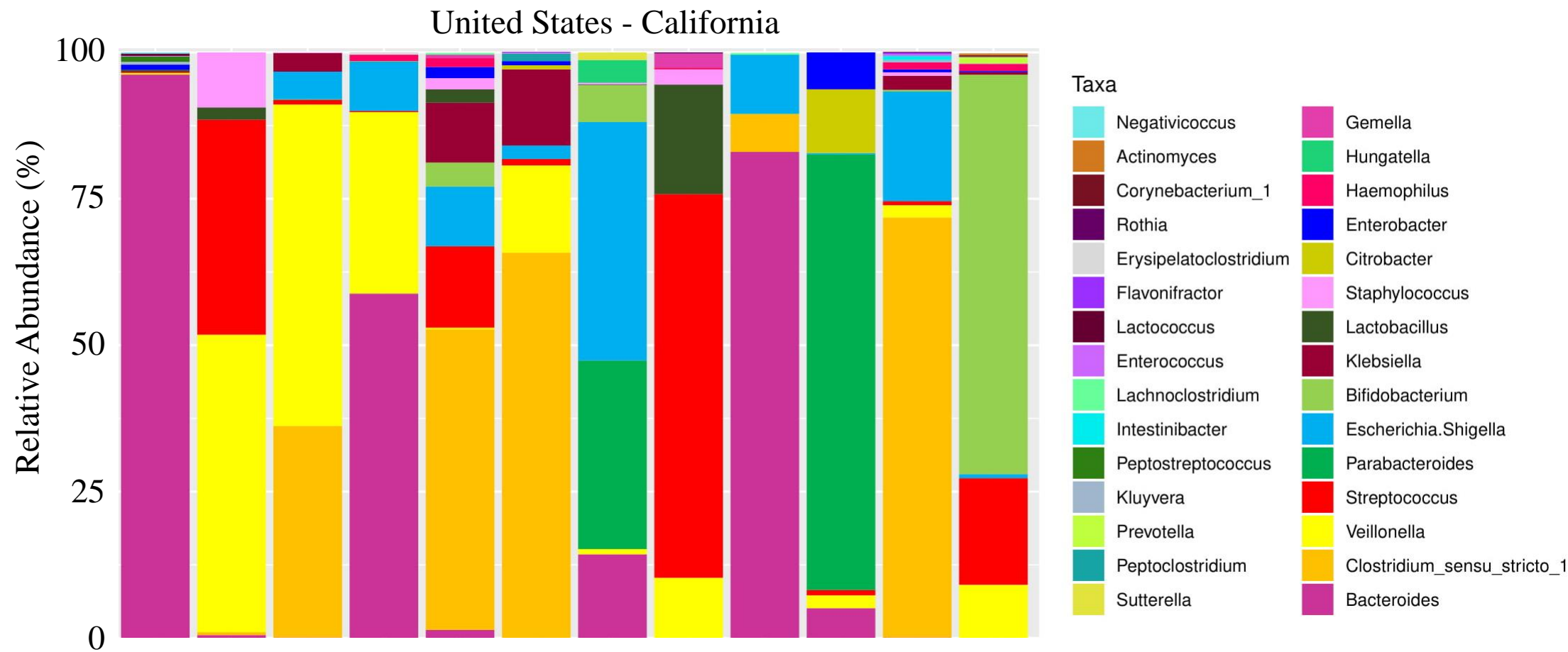
**Supplementary Figure 8**. Relative abundance of the 30 most-abundant genera in infant fecal samples ($n = 37$) collected in Spain. Each bar represents a single sample.
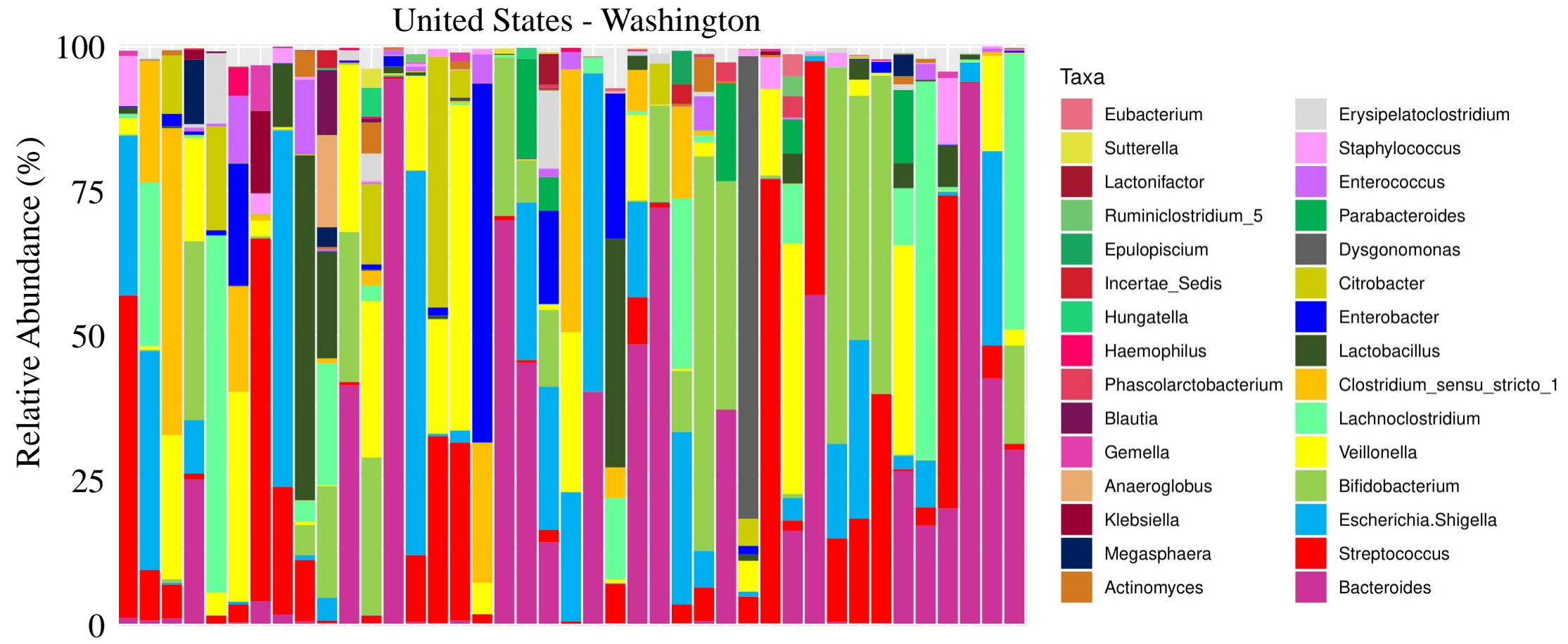
**Supplementary Figure 9**. Relative abundance of the 30 most-abundant genera in infant fecal samples (*n* =23) collected in Sweden. Each bar represents a single sample.
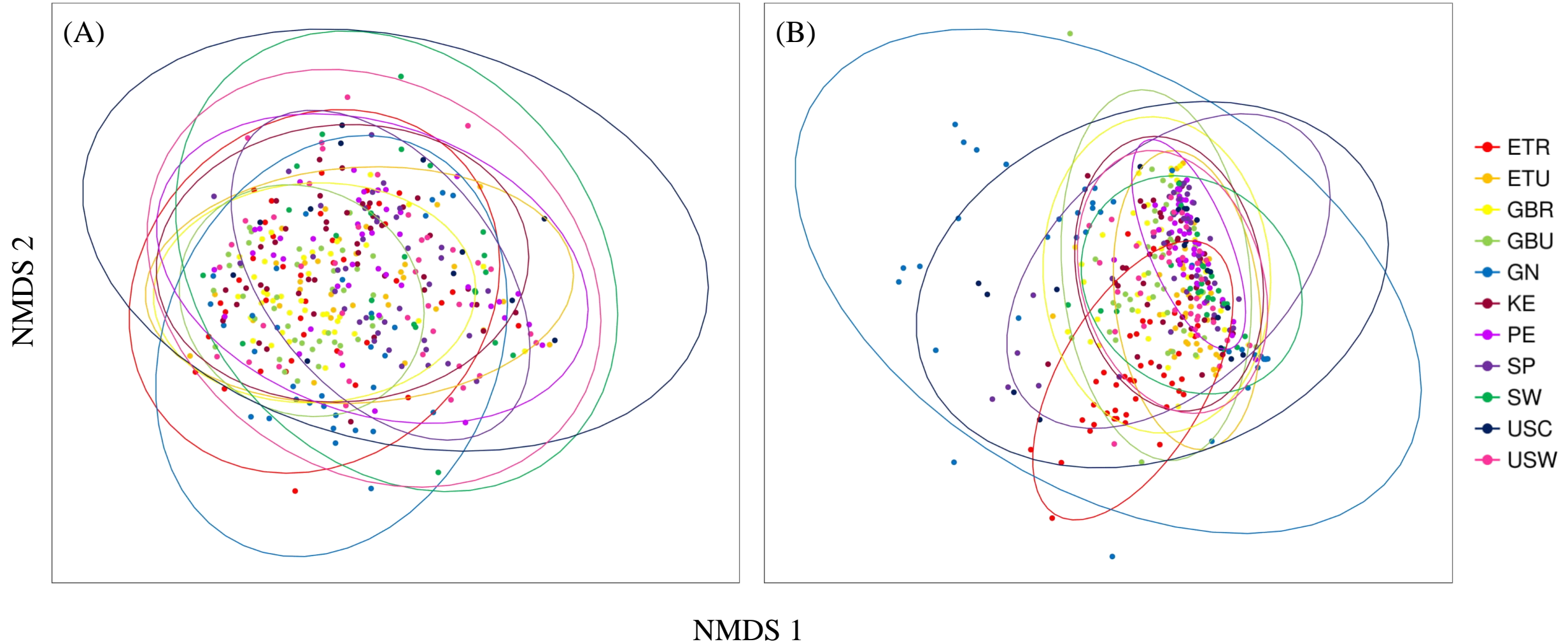
**Supplementary Figure 10**. Relative abundance of the 30 most-abundant genera in infant fecal samples (*n* = 12) collected in US California. Each bar represents a single sample.

**Supplementary Figure 11**. Relative abundance of the 30 most-abundant genera in infant fecal samples (*n* = 41) collected in US Washington. Each bar represents a single sample.
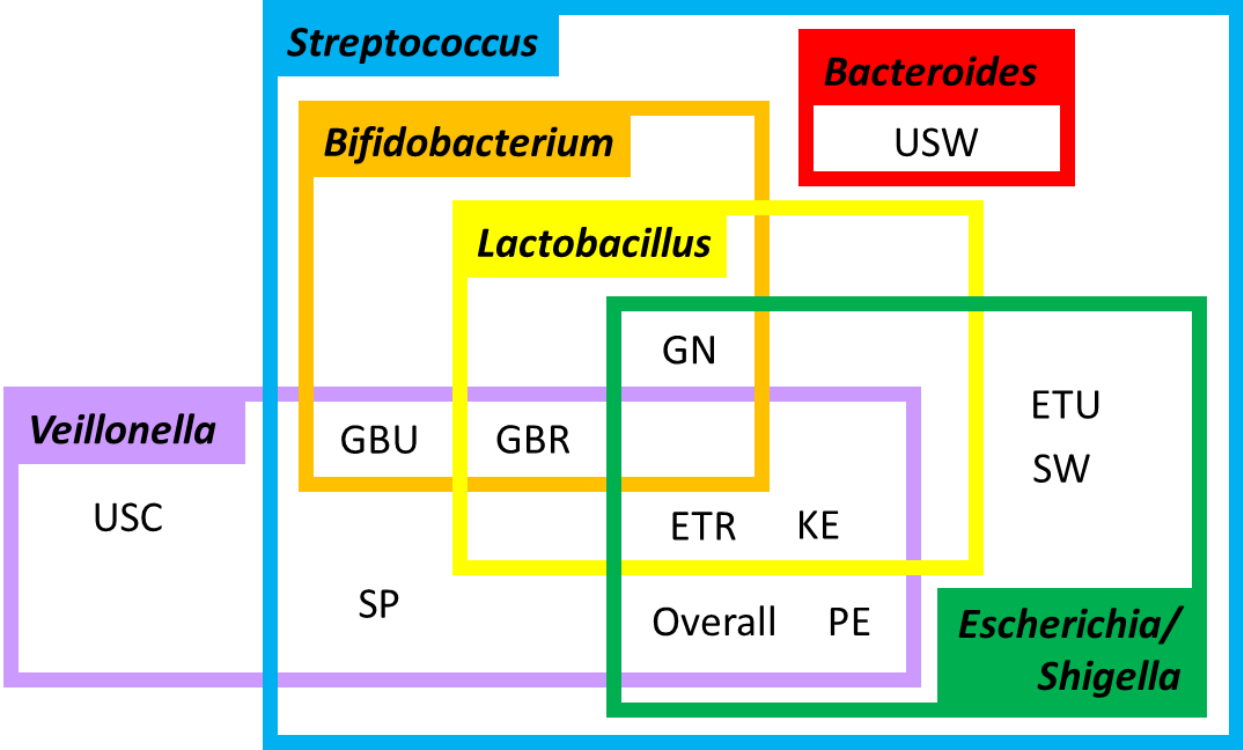
**Supplementary Figure 12**. Non-metric multidimensional scaling (NMDS) plot visualizing the Bray-Curtis distance by cohort for infant feces (A) and milk (B). Ellipses represent 95% confidence intervals for each cohort.
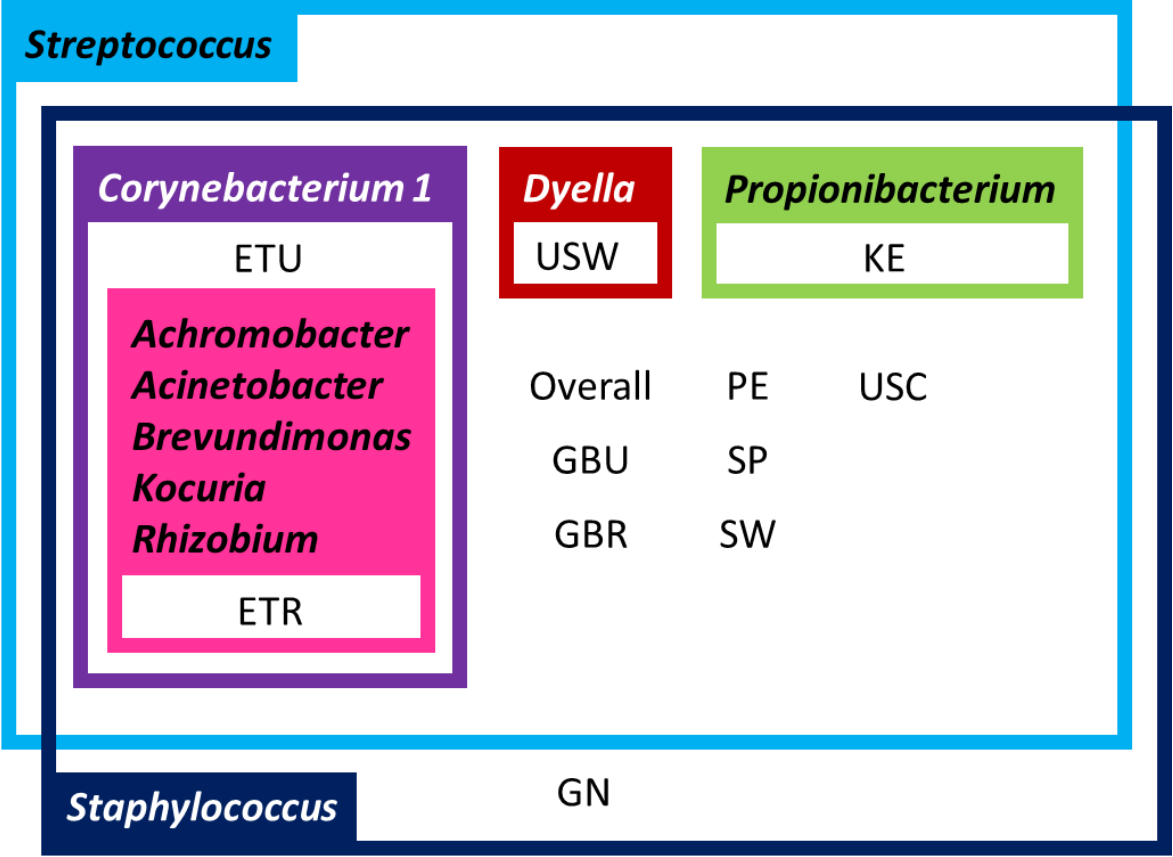
**Supplementary Figure 13**. Venn diagram showing genera present in at least 90% of samples (core taxa) for each cohort and the overall dataset ("overall"; $n = 377$ for infant feces, $n = 394$ for milk). Abbreviations: ETU, urban Ethiopia; ETR, rural Ethiopia; GBU, urban Gambia; GBR, rural Gambia; GN, Ghana; KE, Kenya; SP, Spain; SW, Sweden; PE, Peru; California (United States), USC; Washington (United States), USW.
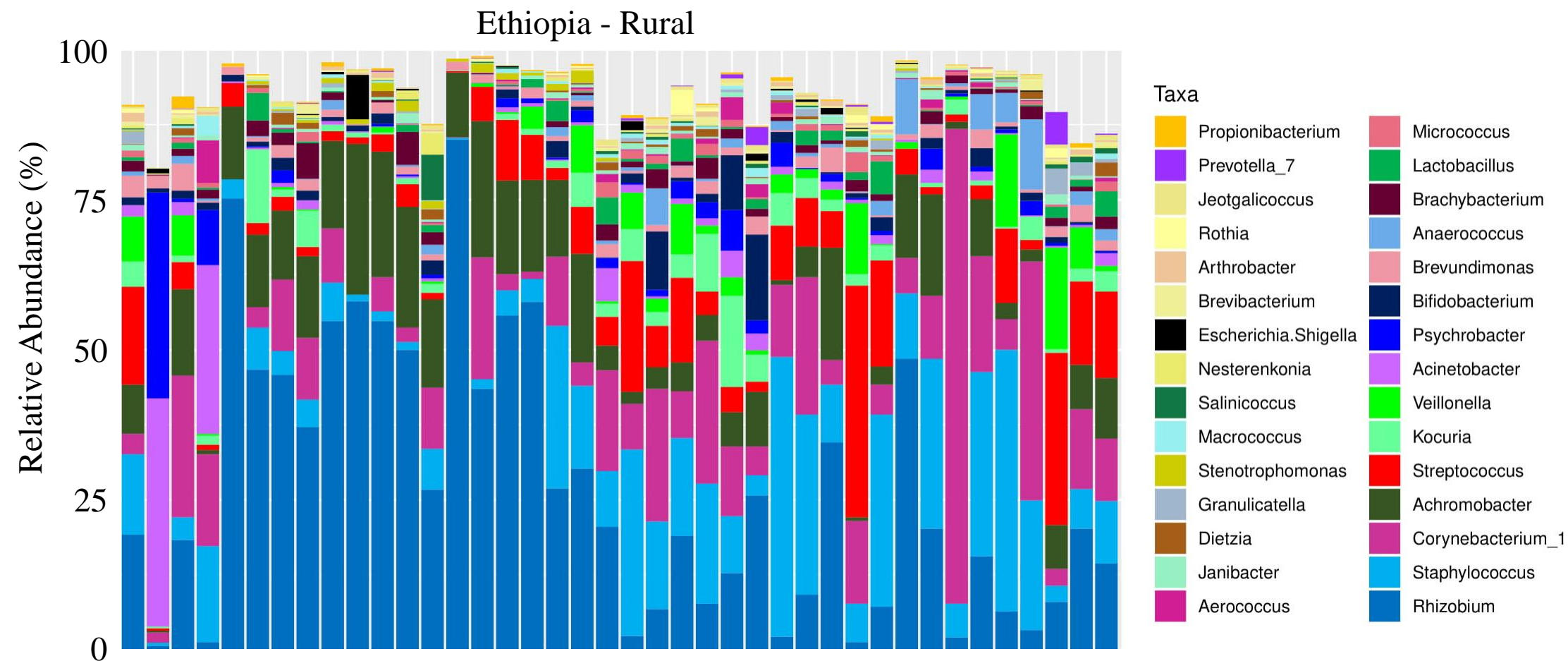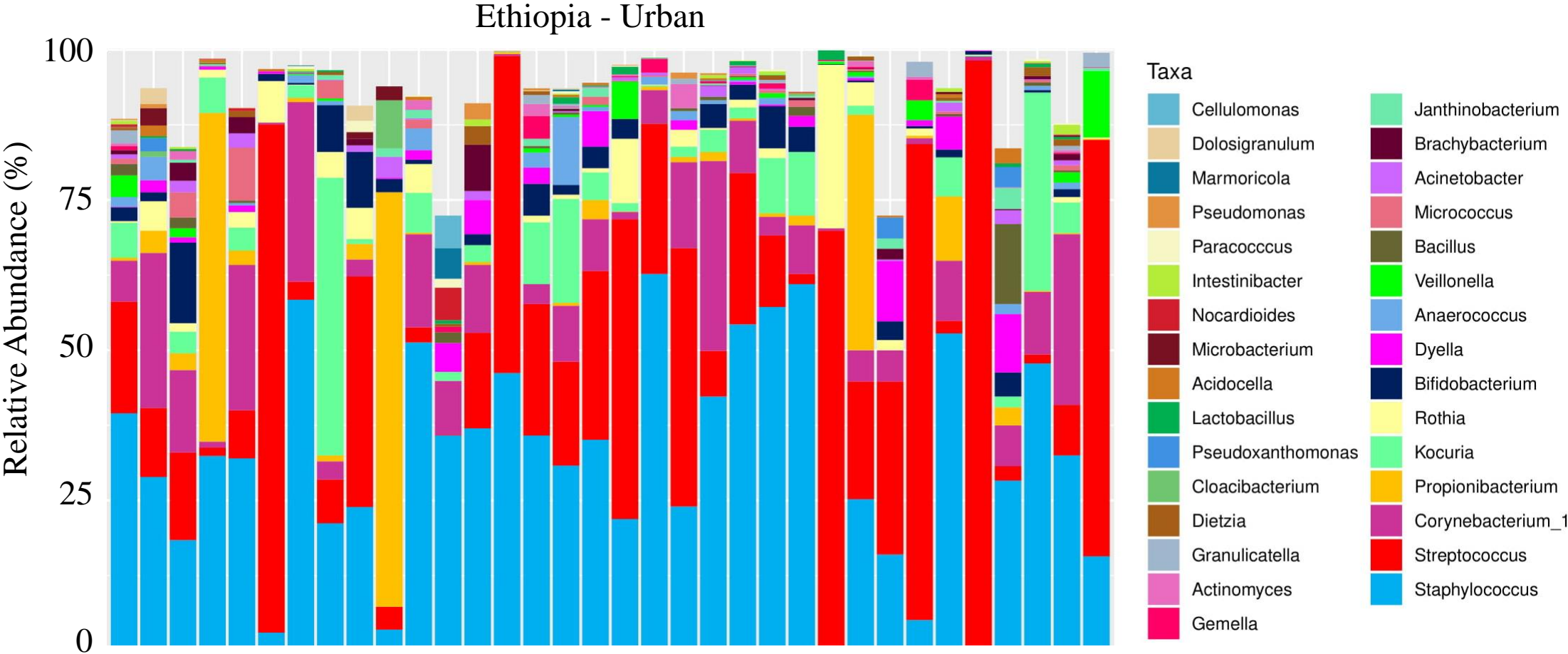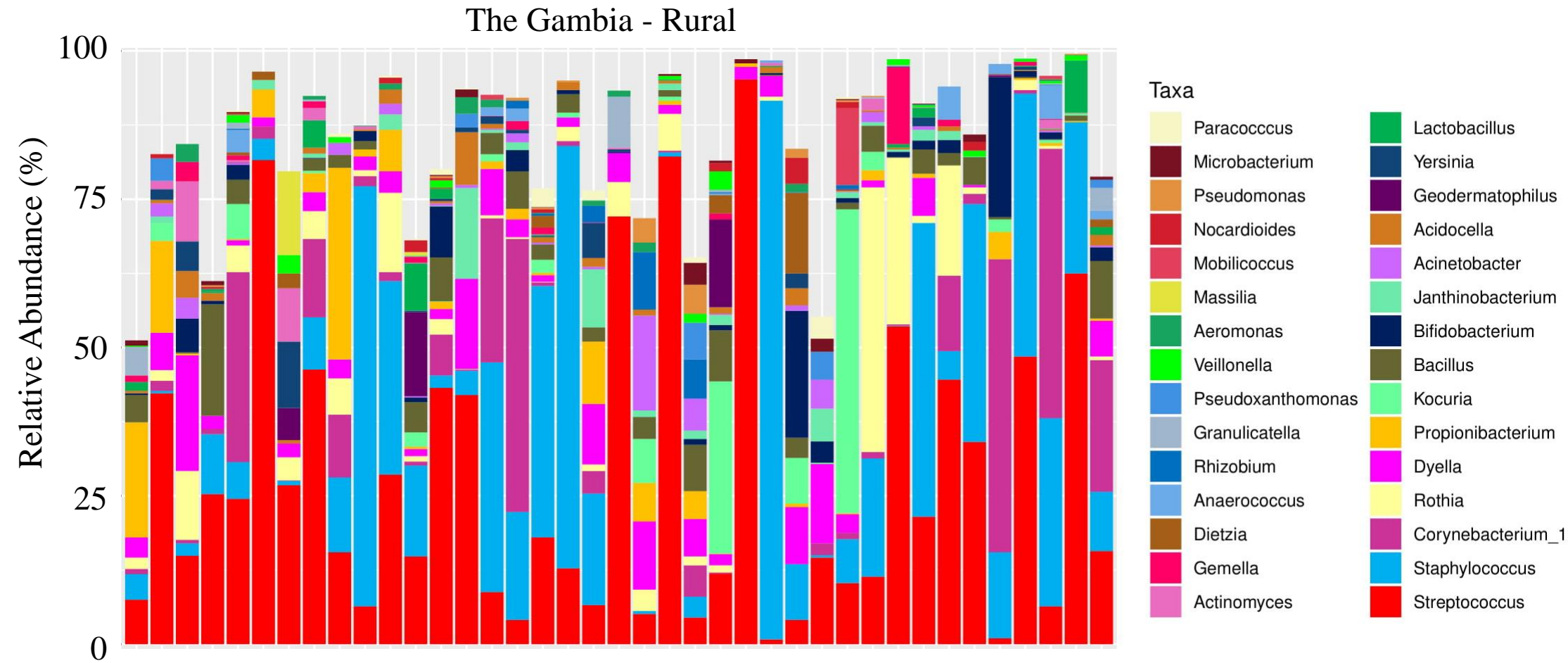
**Supplementary Figure 14**. Relative abundance of the 30 most-abundant genera in milk samples (*n* = 40) collected in rural Ethiopia. Each bar represents a single sample.
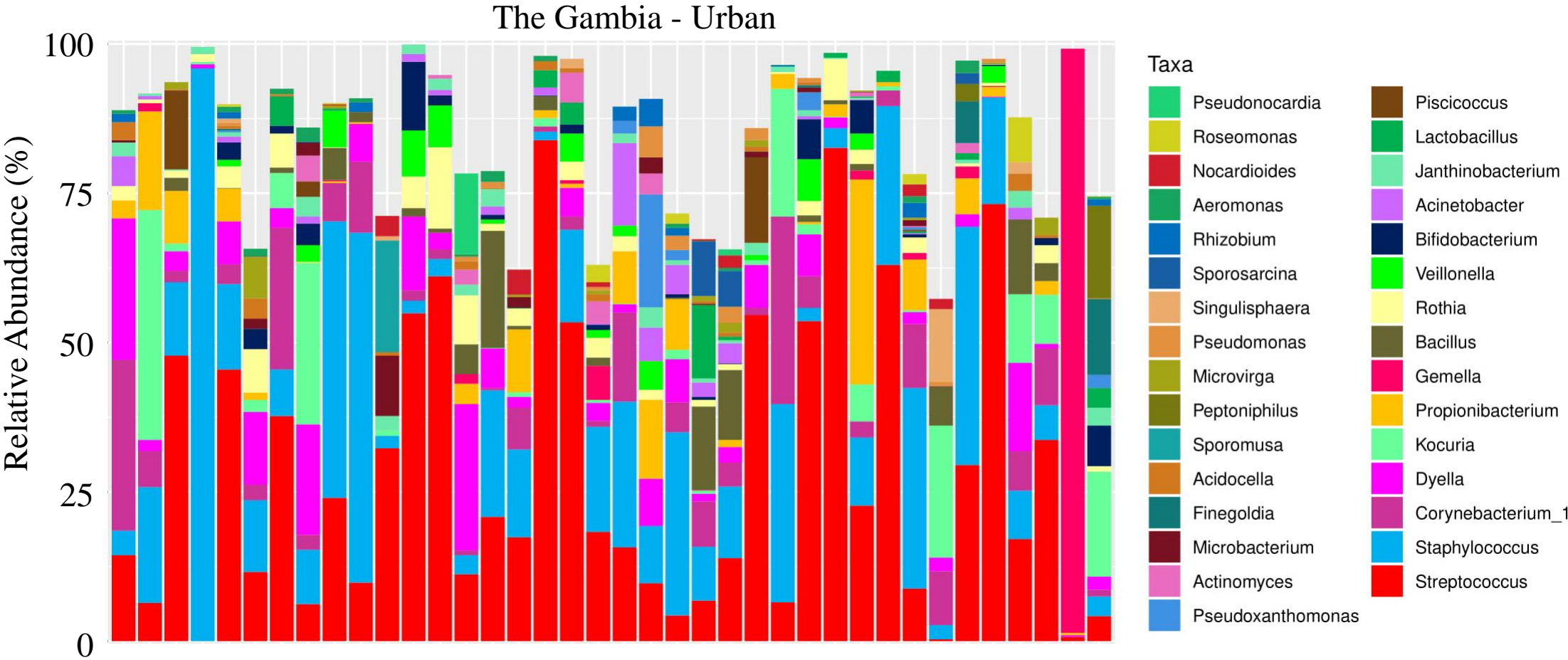
**Supplementary Figure 15**. Relative abundance of the 30 most-abundant genera in milk samples (*n* = 34) collected in urban Ethiopia. Each bar represents a single sample.
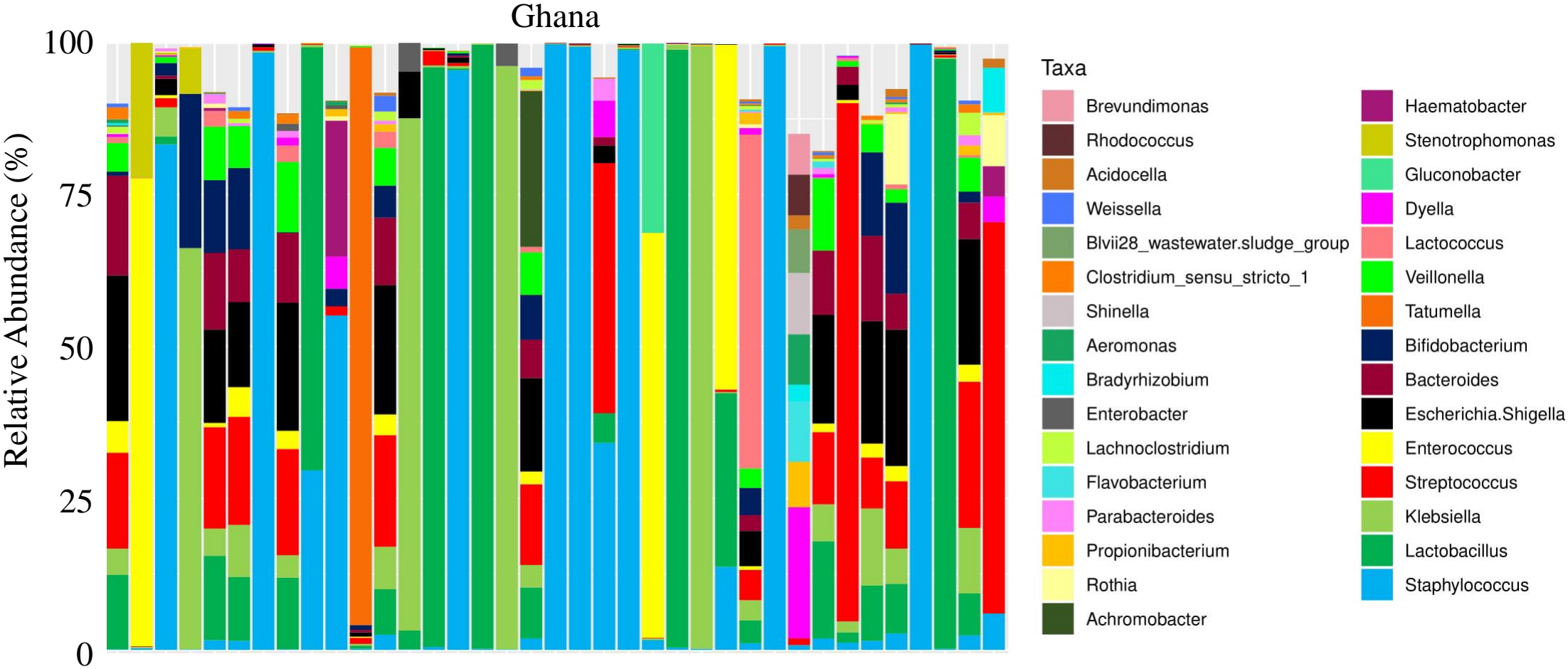
**Supplementary Figure 16**. Relative abundance of the 30 most-abundant genera in milk samples (*n* = 39) collected in rural Gambia. Each bar represents a single sample.
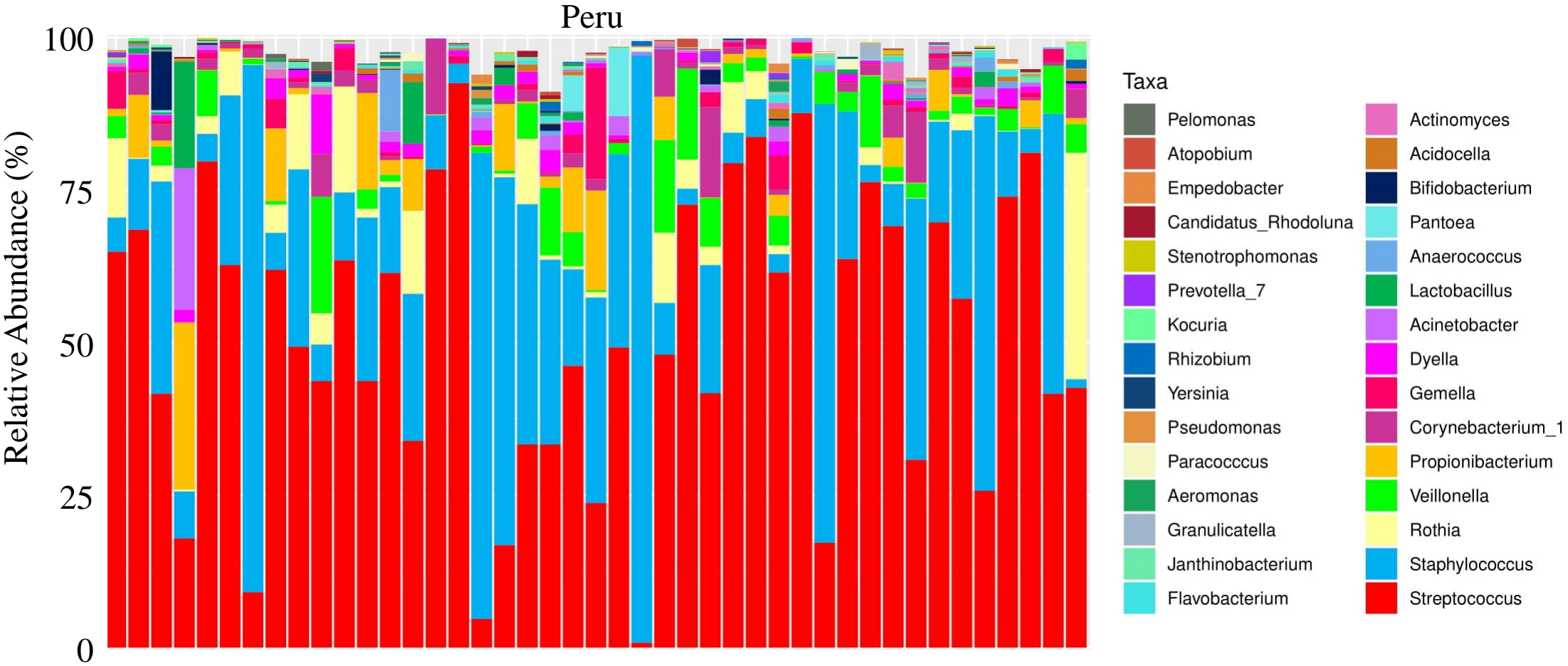
**Supplementary Figure 17**. Relative abundance of the 30 most-abundant genera in milk samples (*n* = 38) collected in urban Gambia. Each bar represents a single sample.
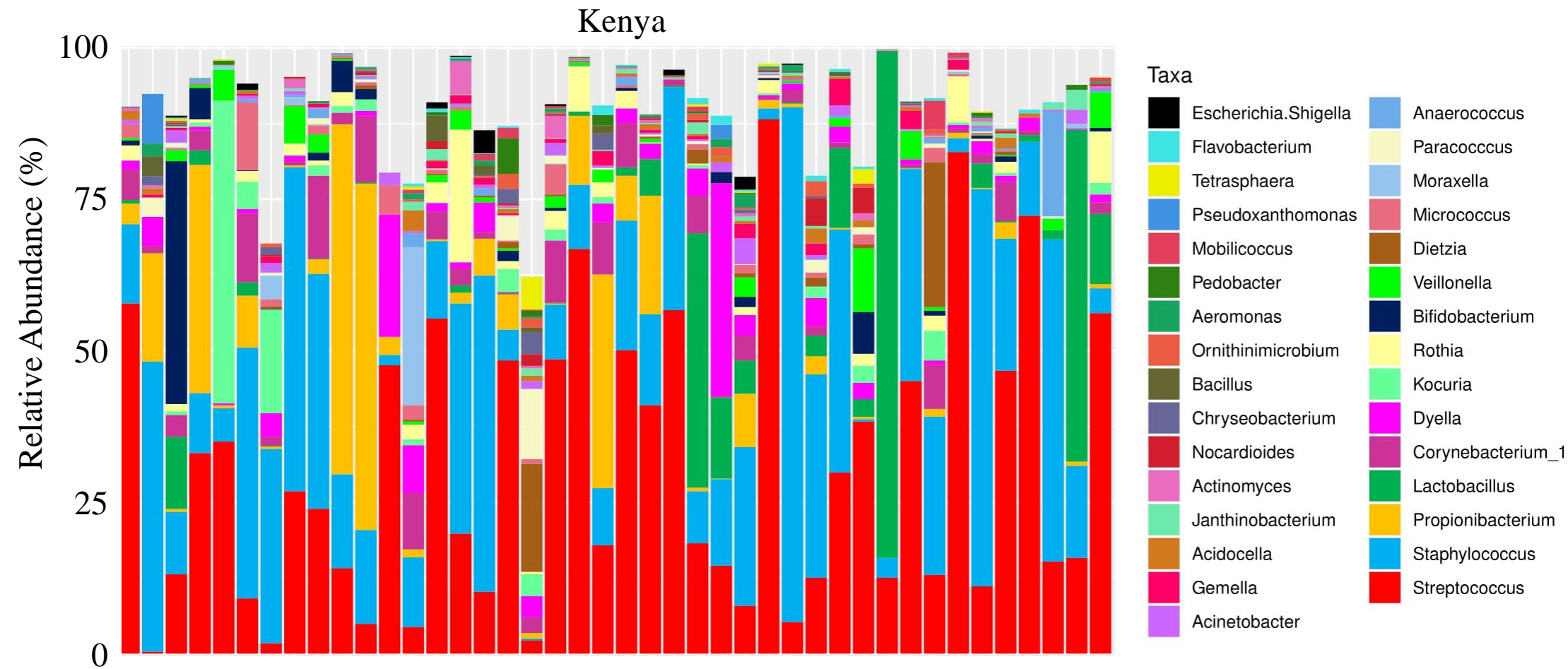
**Supplementary Figure 18**. Relative abundance of the 30 most-abundant genera in milk samples (*n* = 37) collected in Ghana. Each bar represents a single sample.
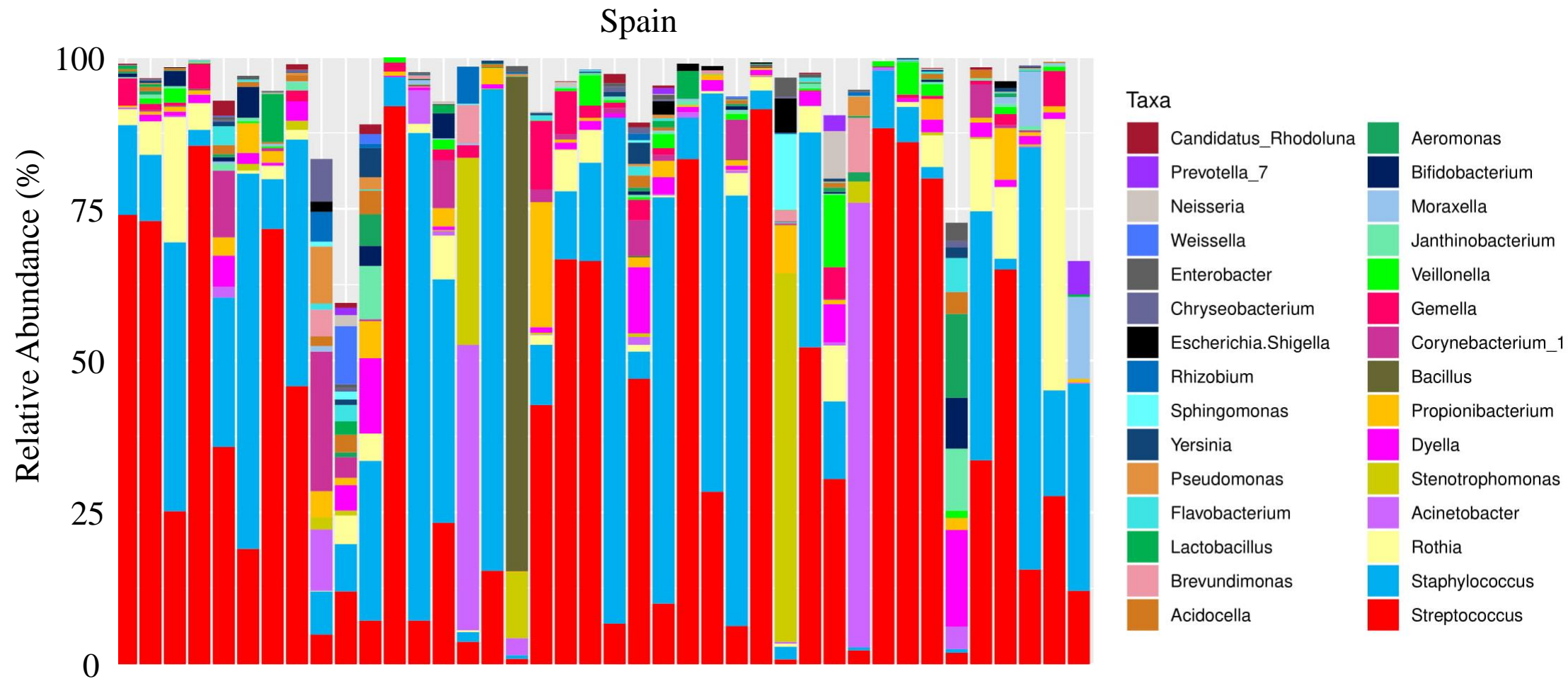
**Supplementary Figure 19**. Relative abundance of the 30 most-abundant genera in milk samples (*n* = 43) collected in Peru. Each bar represents a single sample.
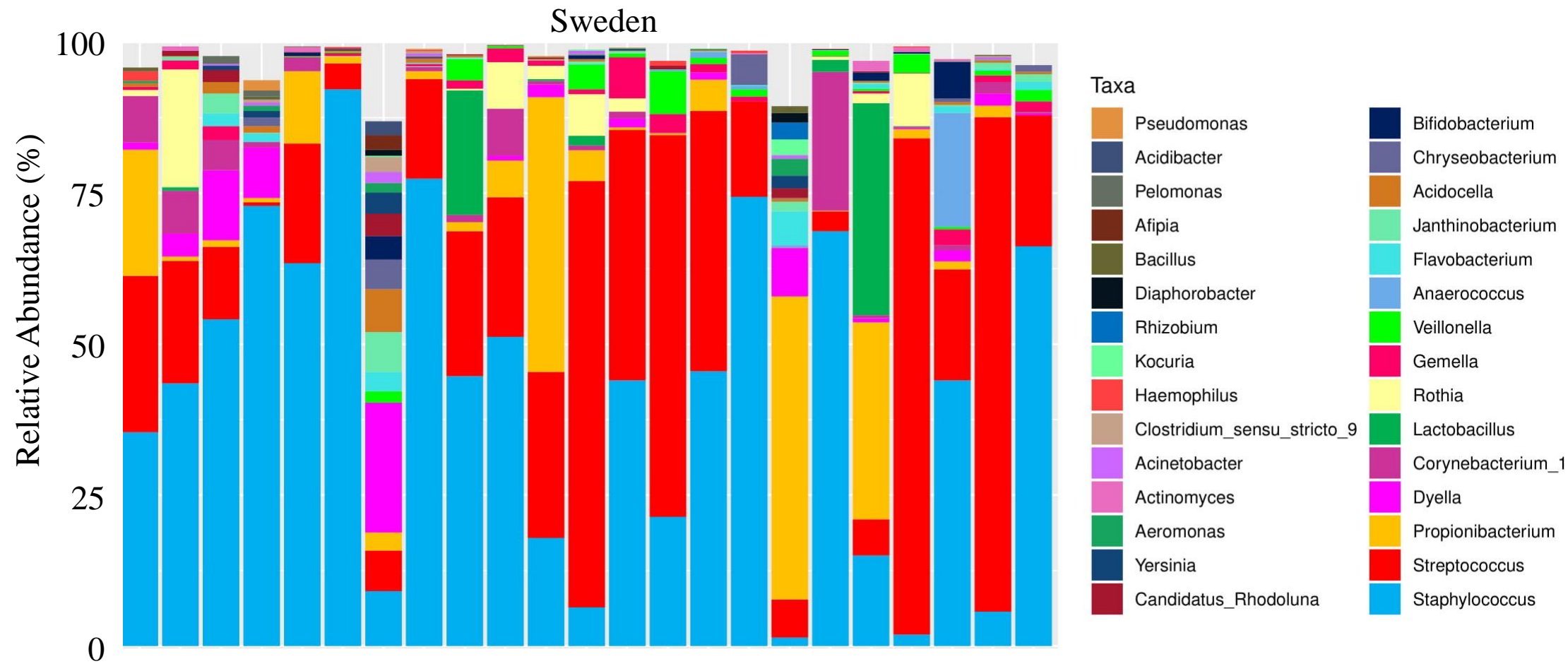
**Supplementary Figure 20**. Relative abundance of the 30 most-abundant genera in milk samples (*n* = 42) collected in Kenya. Each bar represents a single sample.
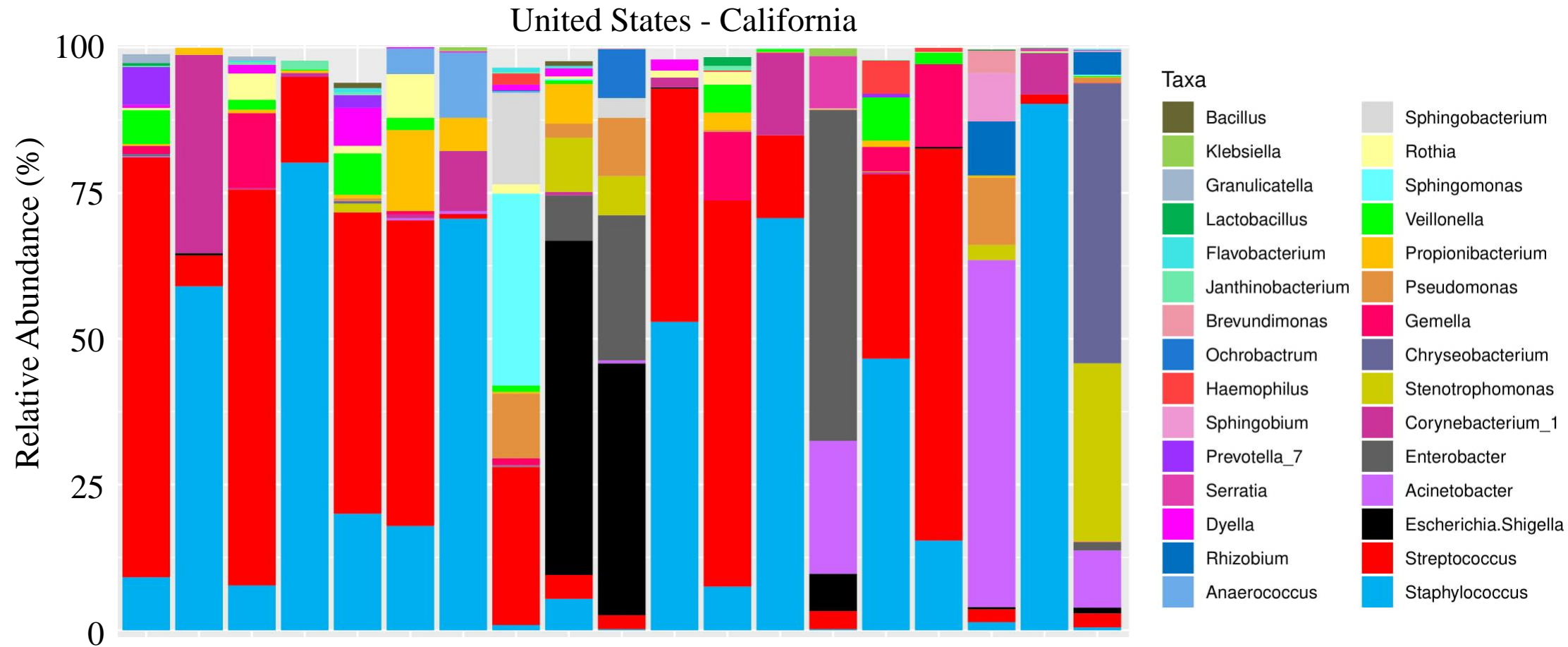
**Supplementary Figure 21**. Relative abundance of the 30 most-abundant genera in milk samples (*n* = 40) collected in Spain. Each bar represents a single sample.

**Supplementary Figure 22**. Relative abundance of the 30 most-abundant genera in milk samples (*n* = 23) collected in Sweden. Each bar represents a single sample.

**Supplementary Figure 23**. Relative abundance of the 30 most-abundant genera in milk samples (*n* = 19) collected in US California. Each bar represents a single sample.

**Supplementary Figure 24**. Relative abundance of the 30 most-abundant genera in milk samples (*n* = 39) collected in US Washington. Each bar represents a single sample.