We present the results of an investigation into the introduction of a linear bottom slope in topography to a quasi-geostrophic, doubly periodic model. Using one and two-layer models, we show that a slope in the meridional direction results in the enhancement of the ‘beta’ effect, producing zonal jets. The novel aspect of this investigation is the introduction of a bottom slope with an arbitrary orientation, which is shown to result in tilting of the jets across layer-wise potential vorticity gradients in the two-layer model. In the two-layer model, we show that these non-zonal jets follow the barotropic potential vorticity gradient, and we interpret the system as a barotropic field driven by baroclinic instabilities. We find that energetics are enhanced when the barotropic potential vorticity gradient is aligned with the direction of the shear in the system. The tilted jets are also demonstrated to be weaker barriers to transport using an effective diffusivity diagnostic. This is of particular relevance to the many regions of the oceans where strong non-zonal jets are present, and is a significant step towards understanding the influence of topography on the dynamical properties of jets.