For a homogeneous space $G/H$ where $G$ and $H$ are of the same rank and both compact connected, Guillemin, Holm, and Zara gave the GKM description of its equivariant cohomology ring. In this talk, we will use generalized GKM theories in both even and odd dimensions to consider the case where $G$ and $H$ have rank difference at most 1 and not necessarily connected, including the interesting examples of certain class of real or oriented flag manifolds.