Mourad Wahba first joined the United Nations in 1993 as a senior advisor in the Office of the Secretary-General. In 1997 he moved to UNDP where he served as a policy advisor in the Human Development Report Office and later in the Office of the Administrator.

Mourad served as Deputy Resident Representative in Guyana, then from 2001 to 2006 as Director of UN Affairs in UNDP. In 2006, he was posted as Resident Coordinator and Resident Representative to Morocco, and returned to Headquarters in 2009 as Director for Security. In 2013 Mourad Wahba was Deputy Director of the Regional Bureau for Arab States in UNDP.

In 2015, Mourad Wahba was appointed Assistant Secretary-General and DSRSG/RC/HC in Haiti, in MINUSTAH. He returned to UNDP in 2017, as ASG and Director of the Regional Bureau for Arab States. He was appointed Associate Administrator, acting, in 2019 with the rank of USG, and retired in 2021.

Upon retirement, Mourad Wahba was appointed by the Secretary-General as an independent expert on BINUH, and is currently a senior special advisor to the Administrator of UNDP. In this capacity, Mourad Wahba was asked to serve as Officer in Charge of UNCDF.