Recently, it is shown that the winter snowfall in South Korea is increasing. Especially, last winter, about 25.8 centimeters of snowfall fell in Seoul was recorded as the highest snowfall ever observed data and more than 10cm of snowfall occurred this winter. This situations cause side effects such as traffic confusion in the downtown, but water resources management will be able to positive effects in South Korea, because South Korea is undergoing a lot of the spring drought. In addition, recent study of climate change suggested that future winter precipitation would be increased than current climate system. So, in this study, we quantitatively evaluate the increase of winter snowfall and impact of spring streamflow. For this study, we used climate scenario which produced by global climate model (ECHO-G/S) under A2 emission scenarios. And climate scenario was downscaled to 20km resolution by RegCM3(Regional Climate Model). Finally, spring snowmelt was calculated by rainfall-runoff model (SWAT) using this downscaled climate scenario. Therefore, we could evaluate the change of spring streamflow. The results of this study, the spring runoff is expected to increase due to spring snowmelt. These results may help in future management of water resources on Korea.