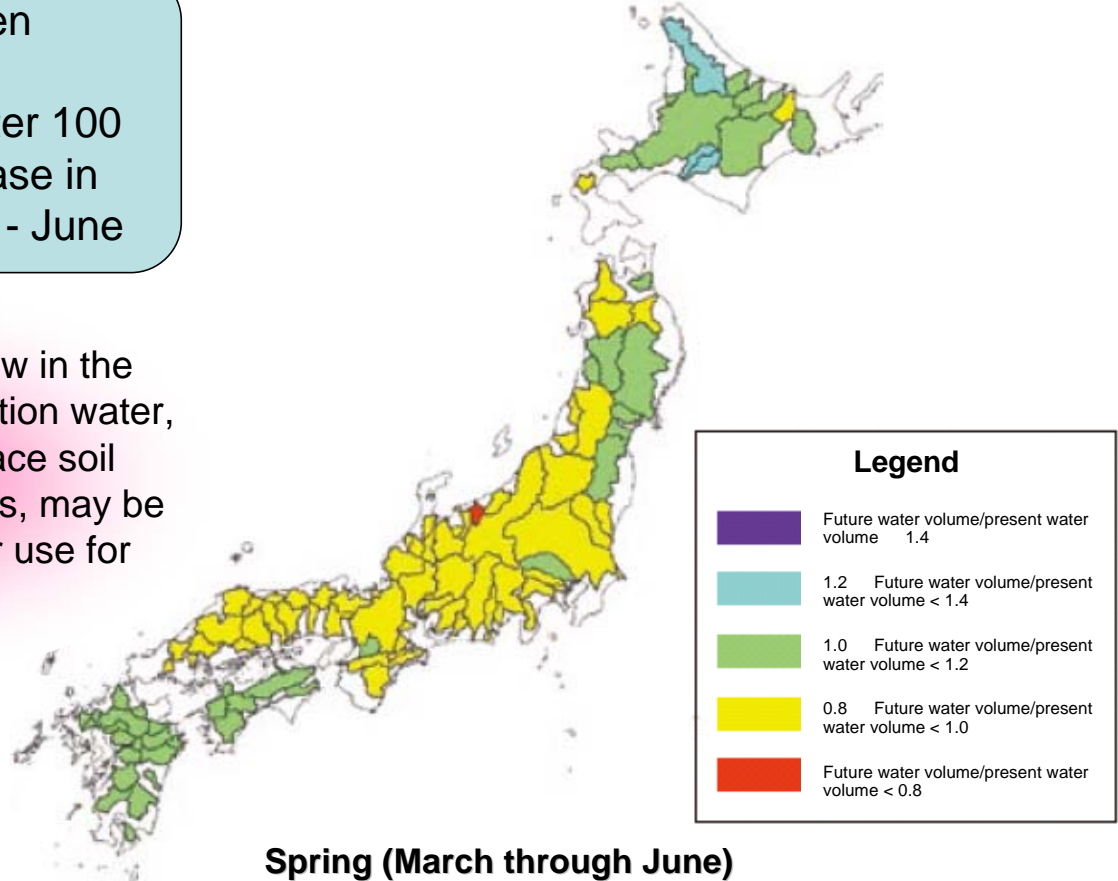


# More frequent and serious droughts

Comparison between present rainfall and predicted rainfall after 100 years shows decrease in most area in March - June

Reduction of river flow in the periods requiring irrigation water, e.g. during the surface soil puddling in paddy fields, may be deteriorated to water use for rice farming.

Comparison between present conditions(1979 to 1998) and future rainfall(2080 to 2099) in Class A river

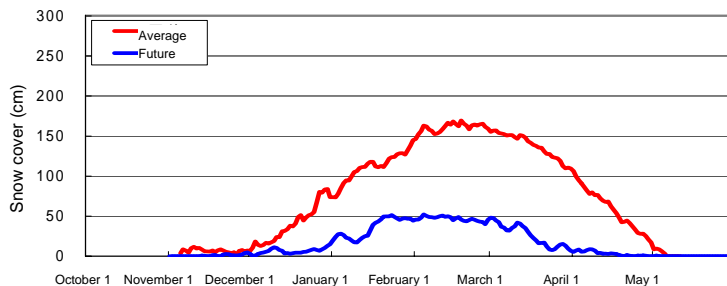


# Frequent and more serious droughts

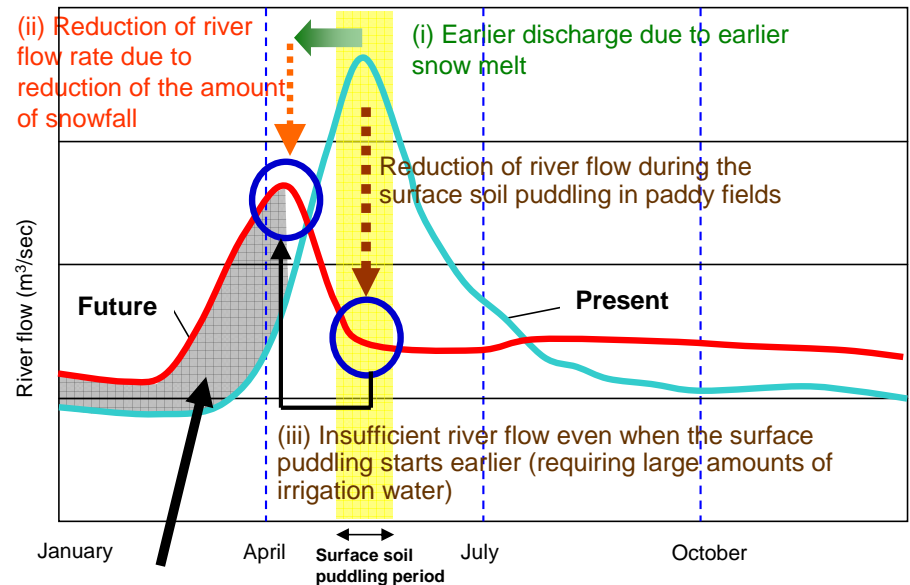
In the upper Tone River, snow cover is likely to decrease considerably. That will accompany the reduction of river flow rate in the snow melt season or in early spring.

With global warming, (i) earlier snow melt and (ii) reduction of snowfall induce changes in river flow rate, and (iii) earlier surface soil puddling in paddy fields is expected to cause the annual water demand pattern to change and to have serious impacts on water use.

Change in snow cover in 100 years' time due to further global warming (Fujiwara)



\*Prepared by Water Resources Department, Water and Land Bureau, Ministry of Land, Infrastructure and Transport based on Regional Climatic Model (RCM) 20, a global warming prediction model, developed by Japan Meteorological Agency.



**Release of reservoir water not contributing to effective water use**  
Where the reservoir is full, released water is not used effectively.