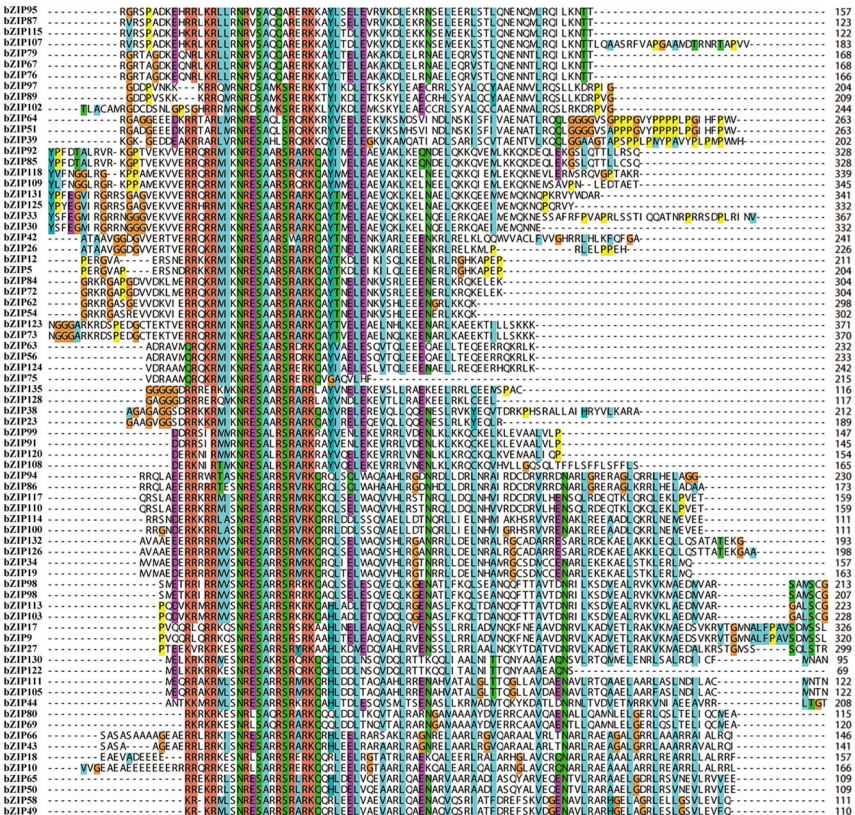


Figure S1. Sequence conservation analysis of PmbZIPs.

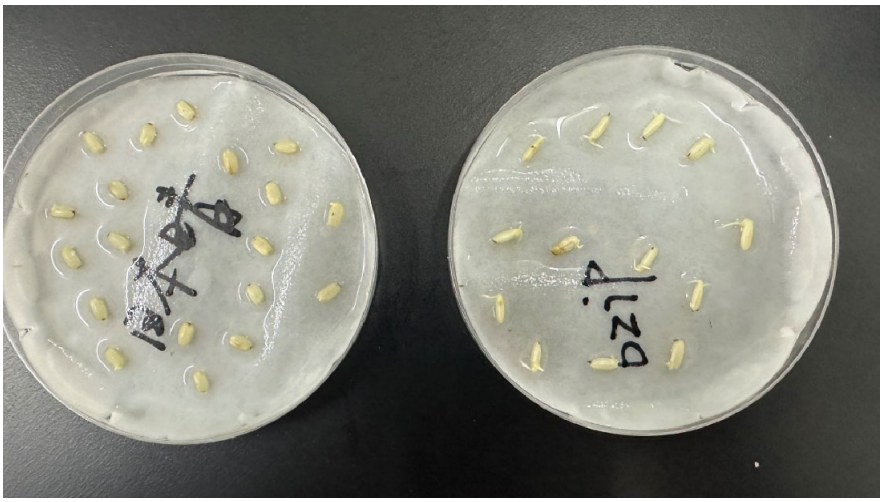


Figure S2. Overexpression of *PmbZIP30* in rice accelerates seed germination. Germination under water was compared between Nipponbare (wild-type) and *PmbZIP30*-overexpressing rice lines. It was observed that the *PmbZIP30* transgenic lines germinated significantly earlier than the Nipponbare, with germination initiation occurring at 12 hours post-imbibition in transgenic lines versus 24-36 hours in Nipponbare.