China is the largest cotton producer in the world and has a large population and limited arable land. The average cotton farm size in China is 0.10 ha. It is essential to monitor agricultural condition, mainly annual farm land variation, crop condition and forecast crop yield for government decision making. In recent years, the special information technology suiting the national condition has made considerable progress. The national scale cotton condition monitoring system—Report on Prosperity of China Cotton Production—is introduced in this paper. Chinese cotton industry economy monitor and the early warning indices—Chinese cotton production prosperity index (CCPPI) and the Chinese cotton growth index (CCGI)—have been used for cotton monitoring at a national scale. And their composition, the forecast and the monitor real diagnosis function and the effect in early warning system for cotton industry economy are also analyzed. The monitoring system will help resolve asymmetry information questions in agriculture and meet the demand of cotton production information for the cotton industry chain. It also helps develop crop-informatics in China.