

Adoption of IR4.0 into agricultural sector in Malaysia: potential and challenges

ABSTRACT

Agriculture remains as one of the important economic sectors in Malaysia which provides an employment for more than 1.6 million people. However, the growth of this sector may be hampered by a small-scale production, limited technological application, declining number of arable lands, environmental degradation due to climate change, rapid urbanization and aging farmers. In order to improve the competitiveness of the agricultural sector, farmers are encouraged to fully utilise modern technologies in their farms. In this context, adoption of industrial revolution 4.0 (IR4.0) in agricultural sector could bring many benefits, especially in minimizing the production costs and improving the quality of the products. Thus, this review focuses on the adoption strategies of IR4.0 into agricultural sector in Malaysia. A suitability of enabling technologies such as IoT, autonomous robot, big data analytics and artificial intelligent which are pillars for IR4.0 are individually evaluated. The readiness of agricultural industry in Malaysia to embrace this new concept is also discussed. The review also investigates the potentials and possible challenges would be faced by the industry in embracing IR4.0. The recommendations are also provided for farmers, industrial players and policy makes to makes sure a smooth adoption of IR4.0 into agricultural sector in Malaysia.

Keyword: Agriculture; IR4.0; Production; Autonomous robot; Internet of Things(IoT); Enabling technologies