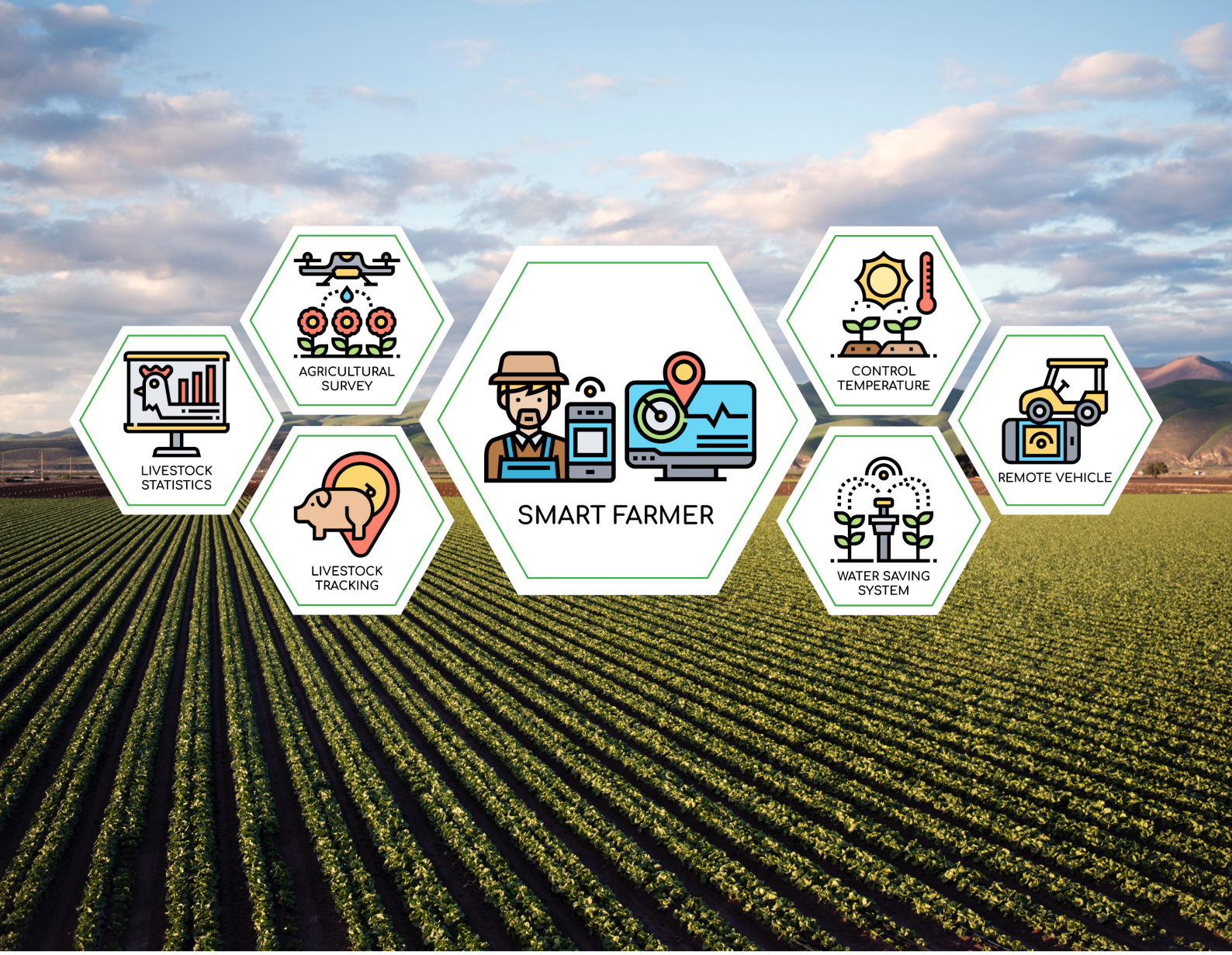

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SMART FARMING:

IS CREATING INNOVATION HUBS A WAY OF INTRODUCING EMERGING FARMERS TO THIS SCIENCE?

All over the world, emerging farmers are strangely coming to terms with ICT agricultural concepts such as Internet of Things (IoT), smart irrigation systems, precision agriculture, drone technology etc. Clubbed together, these applications could be viewed as smart agriculture/farming.

Using a universal definition, smart farming typically involves "the integration of information and communication technology for better utilization of resources from sowing, irrigation, fertilizer, pesticide, and herbicide application, and finally harvesting."

These applications according to the Food and Agriculture Organisation (FAO) are projected to increase farmers agricultural production by an estimated 70% come 2050. In America for example, close to 250 000 small farms spanning 1200 million hectares were using Internet of Things (IoT) solutions as a new technique to realise increased agricultural productivity.

Asian and European countries were also following in this path of integrating and migrating their smallholder farmers to smart farming/ agriculture. Interestingly, a quick assessment across several case studies indicates smart agriculture as a managed process involving government, academia and the private sector.

Scandinavian countries, under the Scandinavian Regional Cluster (RC), developed agricultural Digital Innovation Hubs (DIHs) in partnership with leading agri-food research institute and by a company specialised in agricultural research and innovation.

“It works to strengthen the Nordic network of agricultural Digital Innovation Hubs (DIHs) by assisting relevant stakeholders in defining efficient roles in the region, and by developing a tailor-made set of services in order to promote the digitalisation of farms. The goal of this RC is to establish and expand the Scandinavian ecosystem, help develop digital solutions and adapt these to the regional environmental circumstances, and ultimately to share this know-how with other regions all over Europe.”

As a way of introducing farmers to digital smart agriculture practices, the DIH’s Research and Development (R&D) was instrumental in understanding the farmers environment, ensuring the provision of suitable digital solutions.

Deducing from this work, it is apparent that the Scandinavian Regional Cluster (RC) managed the process of introducing farmers to these new ICT concepts, coordinated at one central location (DIHs) and provided training, in the process capacitating farmers with the skill to implement or use digital smart farming applications.

Cascading the idea down to South Africa could work in introducing emerging farmers to these new technologies. Already, South Africa’s premier science institutes like the Technology Innovation Agency (TIA), Gauteng Innovation Hub, Council of Scientific and Industrial Research (CSIR) and the Agricultural Research Council (ARC) were already involved in agricultural science and technology breakthroughs.

Most notably, the work done by the South African Sugarcane Research Institute (SASRI) embodied the Scandinavian model focusing on four multidisciplinary programmes, namely Variety Improvement, Crop Protection, Crop Performance & Management and Systems Design & Optimisation. Research is translated into IsiZulu through various forms of communication; videos, pamphlets and radio podcasts.

Altogether, it is plain the see that South Africa had the means, structure and capacity to transition farmers to digital smart farming practices. But the immediate consideration was rather how to the harness these innovations to be accessible at one central hub supported by communication methods applied by SASRI.

Embracing digital smart farming hubs was looking towards the future and sustainability of the agricultural sector. The digital smart farming spoke to the younger generation of farmers who are adept to all IoT’s.

There was no longer an excuse to be cautious or ring hiatus, as the speed and demand of IoT even necessitated the Independent Communications Authority of South Africa (ICASA) to issue the ‘release of spectrum to meet the spike in broadband services demand.’ Sooner, farmers from far-flung corners of the country will be connected pushing demand for digital smart farming applications.