

EARTH OBSERVATION SYMPOSIUM (B1)
Improving Earth Observation thru Data Sharing (6)

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USING SPACE APPLICATIONS TO IMPROVE AGRICULTURAL OUTPUT IN AFRICA

Abstract

United Nations prediction indicates that global population will increase to six billion on or before 2015; space technologies and science will play an increasing role to improve farming methods and increase crop yield in order to feed the population. Over the last decade, many governments in Africa have become aware of the use of space applications in agriculture and continue to adopt national and regional policies that promote the use of remote sensing and geographic information systems in natural resource monitoring and agricultural production. Space services drive development and improve national wellbeing in most western states; there is a corresponding need to expand these services in Africa, where the population is expected to double in the next decade. During the last decade, food crises have been on the rise in both developed and developing countries. This is evidenced in the sharp rise in the price of some food items that has given rise to civil unrest in some countries. This unrest suggests that more countries could experience similar event in future, resulting in massive emigration from, and possibly high dead rate in developing countries. The challenges posed by changing climate to agricultural activities worldwide indicate that new farming techniques have to be explored. Space science and technology is a proven farming tool, it enhances industrial farming in the developing countries. International organization like the World Food Organisation and initiatives like United Nations Millennium Development Goals indicates that space technology could significantly contribute to improving world production in the coming years. The World Food Organization encourages, as one of its mechanism, the use of space science and technology in developing countries to increase world food production. Space technology can increase yield, increase quality, save time, and minimize risky farming. High resolution satellite data about farming locations can provide farmers with useful farming information including soil type and moisture content, and the type of crops that can be best produced with these weather conditions. The data can also provide information about potential disasters, yield prediction, and changes in climate during the season and how they affect crop yield and quality. These resources can boost agriculture in Africa where the environment is diverse and equatorial. With expert information from the analysis of data, farmers can make informed decisions related to water stress, greenness index, monitoring of irrigation effectiveness and irregularities, and where and when to increase food production