

IAF EARTH OBSERVATION SYMPOSIUM (B1)

50 years of Earth observation: The contribution to sustainable development goals and plans for the future
(6)

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APPLICATION OF SPACE TECHNOLOGIES FOR AGRICULTURAL DEVELOPMENT IN AFRICA:
AN APPROACH IN LINE WITH THE SUSTAINABLE DEVELOPMENT GOALS OF THE UNITED
NATIONS

Abstract

This research will demonstrate that Space is an essential component of sustainable innovation for employment and economic development of agriculture in Africa. Agriculture is fundamental to sustainable livelihoods. According to Carney's analysis in 1998, livelihood assets can be grouped into various categories, which combined are part of a strategy aimed to cope a vulnerability context to achieve desirable "livelihood outcomes" (FAO 2018). One of them is called "Natural capital", referring to natural resources and processes that households can draw upon, such as crops, livestock and harvested trees. Agriculture contributes to Africa's socio-economic ecosystem to grow sustainably. With the help of Space technologies in the agricultural sector, Africa can maximize its yields in terms of farming which not only leads to increased food production, ensuring access to adequate food for everyone, but will also provide employment. International cooperation and policies in collaborative projects applying space technologies allow access to fundamental information on air quality, soil composition, ocean currents and seismic activity which can be used for agricultural development in the African continent. By using satellite images to monitor crops and barren lands, trade studies can be performed focused on improving agricultural cost effectiveness and technical capability. With the help of Space technologies, "the Space in agriculture" in support of the 2030 agenda of the United Nations for sustainable development can be fulfilled and provide numerous opportunities for the citizens of Africa. This paper will present the case study of the application of Space technologies in agricultural development in Africa and thereby how they are participating in solving the problems faced in the continent according to the Sustainable Development Goals of the United Nations objectives over the years: From end hunger, achieve food security and improved nutrition and promote sustainable agriculture with no poverty (main target of the Sustainable Development Goal number two), and to promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all (main target of the Sustainable Development Goal number eight).