VIETNAM

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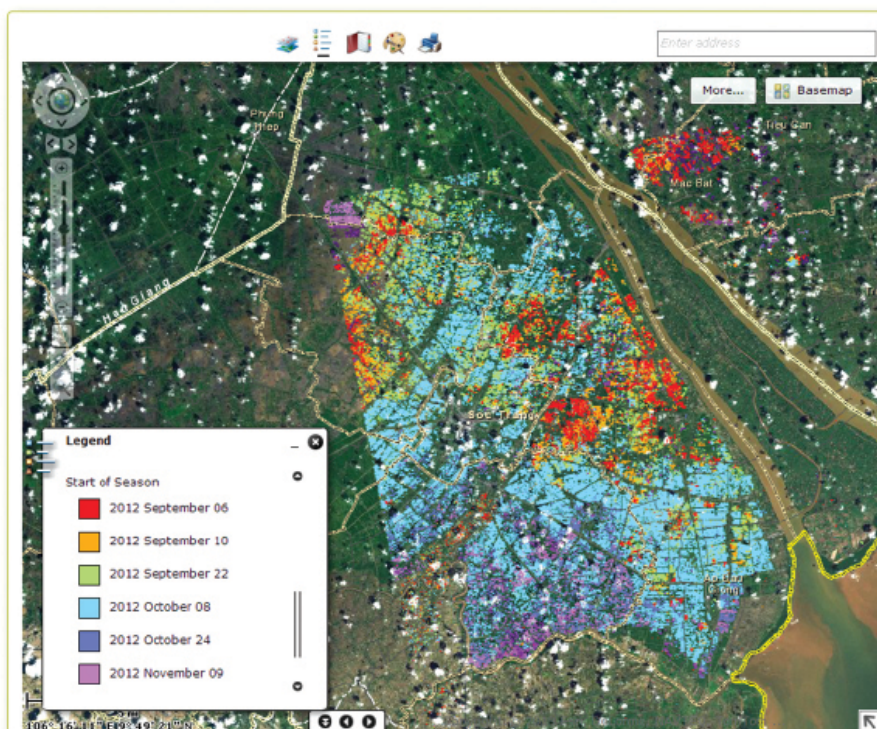Confédération suisse
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REMOTE SENSING-BASED INFORMATION AND INSURANCE FOR CROPS IN EMERGING ECONOMIES (RIICE)

Mekong River Delta, Vietnam

RIICE is a global public-private-partnership project operating in seven major rice-growing countries in Asia: Bangladesh, Cambodia, India, Indonesia, the Philippines, Thailand and Vietnam.

BACKGROUND

In Vietnam, rice is grown over a total of 4 million hectares in up to three harvests per year, amounting to an annual planted area of 7.7 million ha. The total amount of rice produced annually is 40 million tons, of which 7.3 million tons is exported. While rice production is rising, farmers' incomes are generally stagnant or even decreasing due to price volatility caused by insufficient planning. Added to this, Vietnam is one of the top five countries in the world most severely affected by climate change and the Mekong Delta, where most of Vietnam's rice is produced, is in the group of three deltas most significantly affected by the global sea level rise.

In coping with such risks, timely and reliable information on rice production is required to better understand supply and demand, in addition to new adaptation mechanisms to allow farmers to stabilize their income and increase their resilience to climate shock-related crop losses. Information on crop area, crop status and crop yield is produced through a combination of weather-independent radar imagery and crop growth simulation modeling (CGSM), validated by field observations.

Part of the risk management process also encompasses an insurance solution for smallholders that helps to relieve state budget stresses and enables fast payout in case of natural disasters.

As such, the project both meets the needs of Vietnamese rice farmers and feeds into the Strategic Framework of the Swiss Agency for Development and Cooperation's (SDC) Global Programme on Food Security (GPFS), aiming at reducing vulnerability as well as improving resilience and response capacities of smallholders to external shocks.

GOAL

The project aims to reduce vulnerability of smallholder rice producers in two ways: (i) improving the information on rice growth areas and expected yields for better monitoring and management of rice production and (ii) providing remote sensing-based tools for crop insurance solutions.

APPROACH

The crop area, planting dates and crop status will be mapped from satellite imagery and validated for selected rice producing areas in Nam Dinh and Soc Trang provinces through field survey work, known as "ground-truthing". Imagery is provided at resolutions which range from 3 to 20 metre pixels, resulting in detailed maps that can delineate field boundaries and which have an accuracy of more than 90% at sub-district level. Planting dates, crop status and agro-meteorological information are used as inputs to the crop growth model in order to estimate actual yield with an accuracy of more than 90% at district level.

Know-how shall also be exchanged and transferred to national partners, including the Institute of Meteorology, Hydrology and Environment (IMHEN), Can Tho University (CTU), the National Institute of Agricultural Planning and Projection (NAIPP) and other relevant government agencies. This also includes the free licensing of MAPscape-RICE software during the project's main phase for the processing of satellite data.

During the main phase a r**emote sensing-based crop insurance solution** covering losses related to flood and drought will be created. The new insurance solution will enhance traditional crop insurance tools by integrating the remote sensing products into exposure control, risk accumulation control and loss adjustment.

The **scaling up** starts once a rice monitoring system has been demonstrated over successive years in the pilot areas and once insurance solutions are developed and applied successfully in the pilot areas, after which the system and insurance products can be gradually extended and transferred to other rice growing areas.

TARGET GROUPS

In Vietnam, RIICE targets smallholder rice farmers. The project works closely with and provides technical support and tools to government agencies and research institutions for the purpose of rice monitoring and planning (IMHEN, CTU, MARD's Department of Planning, NIAPP). The second group of partners in the field of crop insurance solutions includes the Insurance Supervisory Authorities (MOF) and non-life insurance companies, notably Bao Viet, Bao Minh, Vina Re.

EXPECTED RESULTS

• A mapping system for the generation of i) a baseline rice extent map and ii) rice production figures (including area, yield, planting time and damages due to flood and drought) in the selected areas.

• The development and testing of a new crop growth model capable of estimating potential, actual and forecasted yield.

• The development of the capacity of local partners.

• A database including WebGIS capabilities incorporating key products accessible to all partners of the project, e.g. including government agencies.

• The development of insurance solutions using the above mentioned rice crop model covering production shortfalls (e.g. from flood and drought) on a regional level (and at a later stage on field level).

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Project at a glance:

Title	Budget	Partners	Project Provinces
Remote Sensing-based Information and Insurance for Crops in Emerging Economies (RIICE)	(2/2012 - 1/2015) CHF 830,000 (USD 875,000)	Allianz Re, International Rice Research Institute (IRRI), GIZ and Sarmap SA, IMHEN, CTU, NIAPP	Red River Delta (Nam Dinh province) and Mekong River Delta (Soc Trang province)