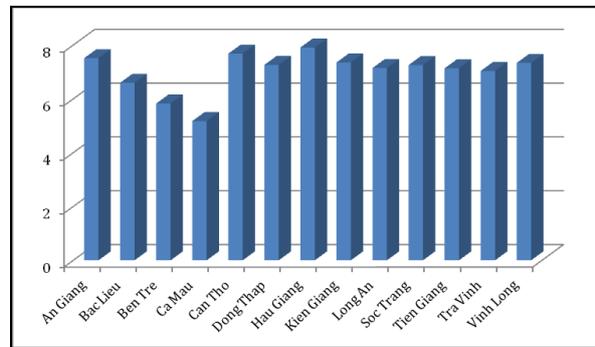
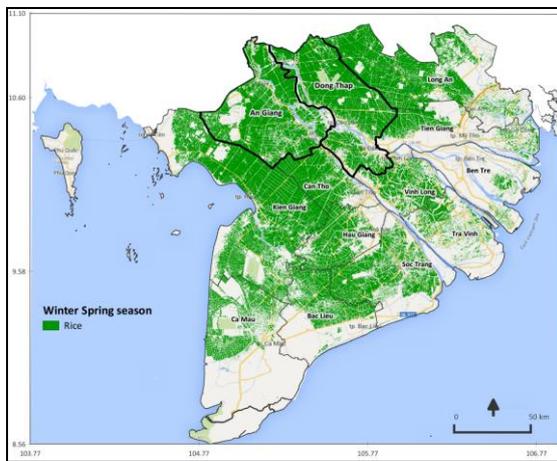


Assessment of Winter-Spring 2015-16 rice season in the Viet Nam’s Mekong River Delta

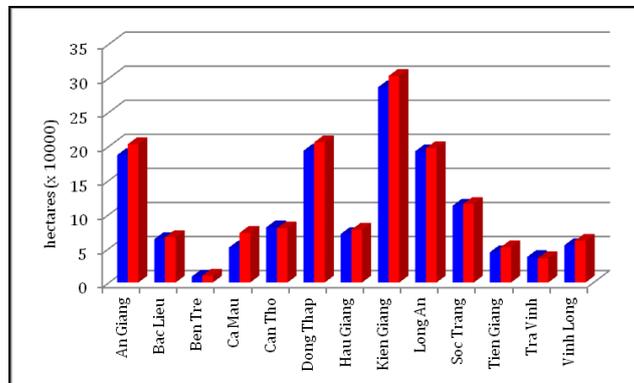
As in most of the South/South-East Asia regions, the Winter-Spring 2015-16 rice season in the Mekong River Delta has been characterized by the limited water availability – river levels at 90 year lows – caused by reduced precipitations since early 2015 and delayed water release of the hydroelectric dams in China. The low water level for irrigation coupled with intensified salinity intrusion aggravated the water salinity condition, in terms of concentration and extent.

Sentinel-1A data acquired every 12 days from September 2015 to April 2016 have been used to estimate the rice area (refer to the map on the left), monitor the rice seasonal dynamics, and, coupled with a rice growth simulation model, to infer yield (refer to the bar chart on the right). It is worth mentioning that yield has been modeled by considering the effect of higher salinity concentration.



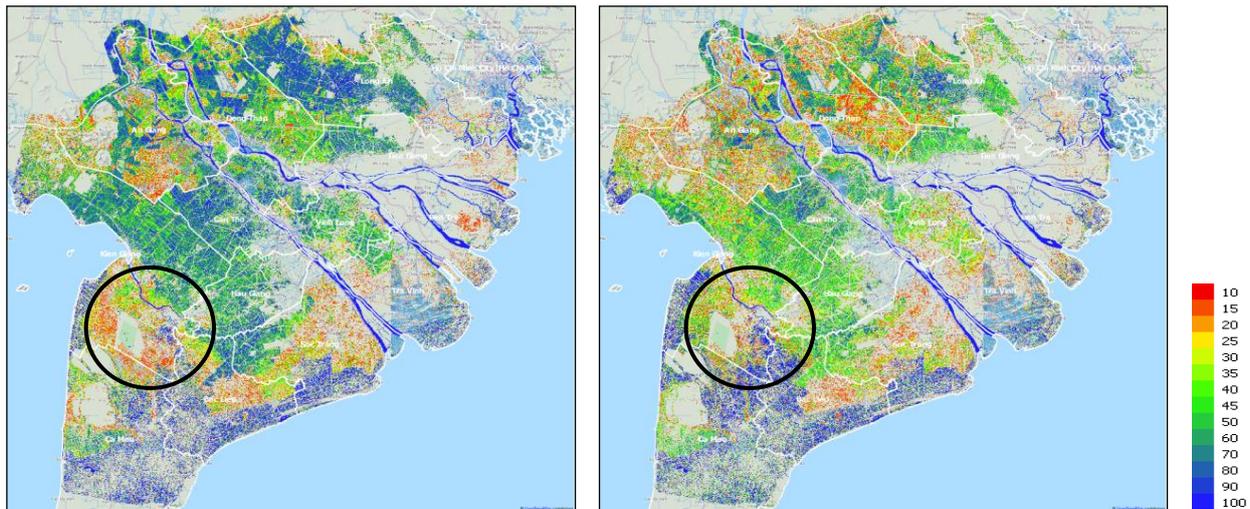
Rice area 2015-16, on the left, and estimated yield (tons/ha), on the right, by provinces.

A comparison of the rice area at start of season between this Winter-Spring season and the previous one (2014-15) confirms an estimated reduction of the rice area of about 7% (i.e. approximately 95,000 hectares), whereas compared to the eleven year average (2000-2011), a 9% rice area decrease is observed (i.e. corresponding to about 136,000 hectares).



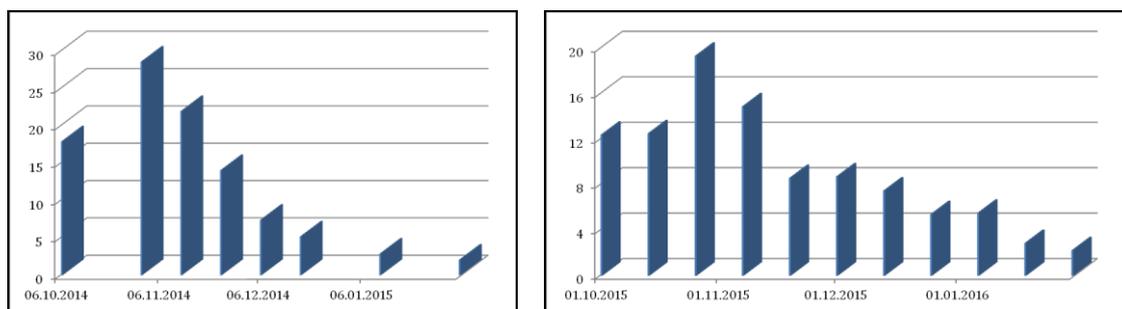
Estimated rice area 2015-16 (blue) and 2014-15 (red) by provinces.

In order to gain a better understanding of this anomalous rice season, Sentinel-1A data has been additionally analyzed by detecting the water conditions along the whole season. In essence, the hypothesis is that if less water is detected, in terms of extent and occurrence, a reduction of the rice area and in particular an impact on the rice production, is expected. Note that occurrence is defined for a given season as the amount of Sentinel-1A data in which water was detected, expressed as a percentage of the total number of images acquired during the whole rice season. The two maps below illustrate the detected water extent and occurrence over the whole Mekong River Delta for the Winter-Spring 2014-15 (left) and 2015-16 (right) season. In the center of the delta, the lower occurrence of detected water condition during the 2015-16 season (around 20% less) is apparent, hence confirming the reduced water availability in the region. It is worth mentioning that in the South and West part of the delta, the dark blue corresponds to shrimp cultivation. An exception to the general trend is represented by the South part of the Kien Giang province (indicated with the circle), where, most probably, there is a rice-shrimp rotation, i.e. farmers decided to utilize the saline water for shrimp farming.



Detected water extent and occurrence in 2014-15 (left) and 2015-16 (right).

Finally, the bar charts below indirectly confirm the reduced water availability in the An Giang province as example. While for the Winter-Spring 2014-15 season, most of the rice sowing/transplanting occurred within one and half month, in the 2015-16 season sowing/transplanting was distributed over a period of three months.



Detected start of season (in percentage of the total rice area of the province) in 2014-15 (left) and 2015-16 (right) for An Giang province.

Information reported in this bulletin has been generated using MAPscape-RICE, Oryza crop model and data acquired by Sentinel-1A (owned by EU and developed & operated by ESA). Background map ©OpenStreetMap contributors.

MAY 25, 2016 @ 01:39 AM

Water Risk: Vietnam's Worst Drought In Nearly 100 years

Tim Daiss , CONTRIBUTOR *Geopolitical analyst and energy markets journalist based in Asia.*



BEN TRE PROVINCE, VIETNAM – MAY 04: A boat in a dried out shrimp farm on May 04, 2016 in Ben Tre Province, Vietnam. Vietnam's Mekong Delta had been hit by its worst drought in 90 years caused by the El Nino weather patterns and hydroelectric dams. Based on reports, nearly 140,000 hectares of the Mekong Delta in Vietnam are bone dry and contaminated by salt water, as brine from the sea pushes up the delta's channels. People in affected regions are growing desperate to find water for basic needs and huge amount of the crops for the coming harvest in Vietnam's Mekong Delta, which produces about half of the country's rice, have been spoiled. (Photo by Christian Berg/Getty Images)

Vietnam's Mekong Delta is suffering from its worst drought in nearly a century, and the effects have been devastating . Experts' claim that the drought is caused in part by this year's El Niño, one of the worst on record.

El Niño is characterized by unusually warm ocean temperatures in the Equatorial Pacific, as opposed to La Niña, which is characterized by unusually cold ocean temperatures in the Equatorial Pacific, according to the U.S. National Oceanic and Atmospheric Administration (NOAA). An El Niño effects weather patterns around the globe, often with destructive consequences.

NOAA also said that April “[was record warm for the month, rounding out one full year of record-breaking monthly temperatures for the globe](#), the longest such balmy streak in the 137-year record, which dates back to 1880.”

Nguyen Van Tinh, deputy head of the hydraulics department under Vietnam’s Ministry of Agriculture, told *AFP* in March that [the water level of the Mekong River had gone down to its lowest level since 1926](#), leading to the worst drought and salinization there.

A [Reuters report](#) said last month that the drought is also compounding a Southeast Asia water shortage along the 3,000-mile Mekong River that runs from Tibet to Thailand to the South China Sea, as climate change and too many dams erode livelihoods for millions of farmers. Water shortages have also hampered agriculture in nearby Cambodia, Laos, Thailand and Myanmar.

The impact of this year’s drought on Vietnam has been and continues to be overwhelming for the Southeast Asian nation of 90 million people, which is still largely an agricultural society. Vietnam’s economic growth in the first quarter of the year dropped to 5.6% year-on-year as its agricultural output dropped due to the drought. First quarter GDP growth for the same period in 2015 was 6.17%.

[Capital Economics](#) claims that this year’s drought could also lead to a serious reduction in exports of major goods produced in the region, including rice, seafood, and coffee.

U.S. Department of Agriculture data shows that the Mekong River countries of Vietnam, Thailand, Laos, Cambodia and Myanmar produce about 62 million metric tons of rice, or 13% of global output, which makes this year’s drought particularly problematic, while prices for rice will rise as a result, further impacting the lives of the area’s economically marginalized. Vietnam is the world’s third-largest rice exporter.

The Mekong River, according to the World Wildlife Fund, accounts for as much as 25% of global freshwater catch and provides livelihoods for at least 60 million people.

Le Anh Tuan, a professor of climate change at the University of Can Tho in the heart of the Mekong region, said [as much as 40-50% of the 2.2 million hectares \(5.4 million acres\) of arable land in the delta had been hit by salinization](#).

However, individual farmers are suffering the most. The [Bloomberg report](#) said that many in the Mekong Delta could not endure poverty caused by the drought and have fled the area, some looking for manufacturing or other jobs in other regions of the country. Families have broken apart and most have lost not only their livelihoods but their hope as well.

Professor Tuan said that “we do not have any specific measures to mitigate the situation,” adding that residents had been urged to save water for domestic rather than agricultural use.

Preparing for and mitigating the impact of future droughts

The [National Drought Mitigation Center \(NDMC\)](#) states that drought is different from other natural disasters such as tornadoes, hurricanes, and floods and can be more difficult to detect and can last much longer than other weather events.

However, just because a drought is different from these other natural disasters doesn't mean that countries, including Vietnam, can't plan for the phenomenon and take steps to help protect themselves from its devastating fallout.

<http://www.forbes.com/sites/timdaiss/2016/05/25/water-risk-vietnams-worst-drought-in-nearly-100-years/#59e104e944c0>