

Hear me talk about agriculture & my space days

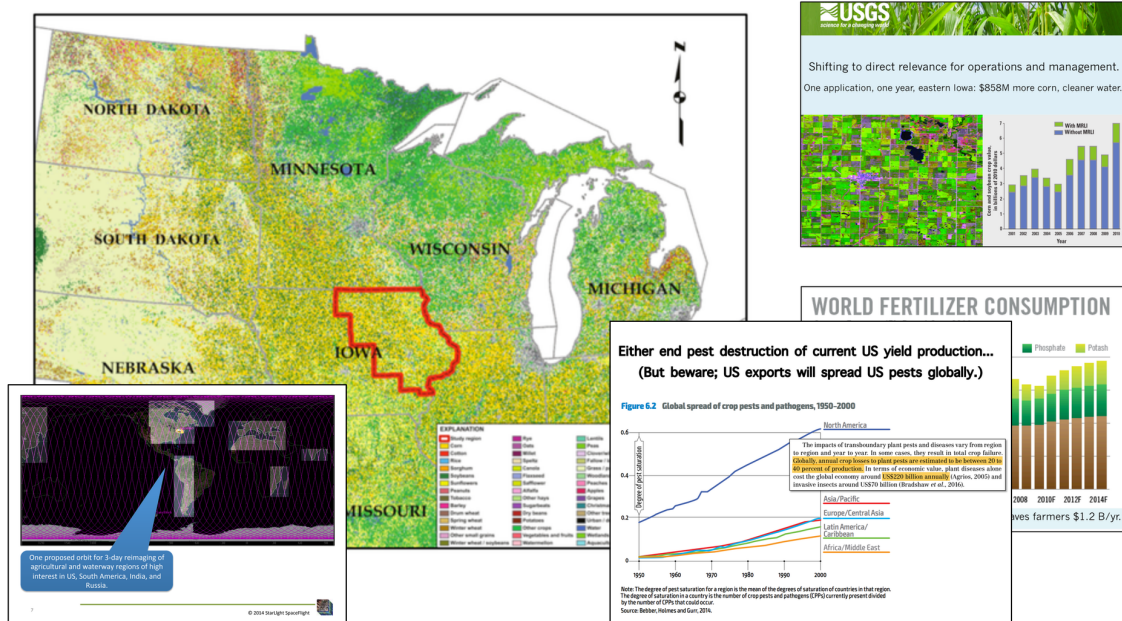
David Bernat // Starlight LLC // July 21, 2026

The green and blue revolutions took their founder more than forty years to create, to bring into existence. I find that inspiring. What are the green and blue revolutions, you ask?

I sat in a small Brooklyn apartment one decade ago to found Starlight. I had spent my morning reading a generic forty page document from the U.S. Bureau of Interior, and the day before I had trudged through fifty pages of an earlier U.S. Treasury briefing about the pegging of food to oil prices after the Bush administration, and the rise of speculators in the currency and commodity markets. The financial price of goods and services had become more about the size of stock market investors than the supply and demand of the crops farmers could actually grow.

I knew I had it. I took a call with a large manufacturing scientist in the Mars domain, one from the same University that handed me my doctorate. I did not understand how Arizona and Arizona State fit into the larger economic tapestry of the political needs in the economy, but we both agreed that something new was going to be needed in the Space domain. I set up a call with a new friend of mine who just graduated from a top University with a dozen acquaintances with a specialization in building Space domain architectures using small and affordable parts, assembled by AI thought.

Could it be possible? That was the only question that mattered, and that was the money they set aside. One of their Russian graduates compiled a systems architecture too. It could be possible. It could. The way these things work is that upwardly mobile academic advisors are used to allocate small amounts of grant capital for academic postdocs, so that Silicon Valley investors can leverage their macrofinance to allocate large industry capital for software capabilities across the surveillance sector, which is how I ended up three years later being paid by a small Russian investor to a small satellite hardware company using the esteemed NASA Ames garage next to the NASA Space Bar.



It was a failure. The Russian investor wanted to count pools and learn the inside details of the U.S. agriculture insurance industry, while glamorizing a failed Space Shuttle equivalent ten or hundreds times larger than the U.S. NASA version, yet had yet to put up the capital for the satellite hardware that would provide the analytic modeling results to know whether the sensors could do their maths. I had no idea what I was doing there. I barely knew the money was connected to my years earlier. But that failure taught me something about AI that no success ever could.

OK. Friday, what are the Green and Blue revolutions of India? Answer in a tight few sentences, with references in a bibliography.

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The **Green Revolution** (1960s-70s) transformed India from a food-deficit nation dependent on US grain imports under PL-480 into a self-sufficient agricultural producer, driven by M.S. Swaminathan's adaptation of Norman Borlaug's high-yielding wheat and rice varieties, expanded irrigation, chemical fertilizers, and institutional reforms (Food Corporation of India, Agricultural Prices Commission). Wheat production rose, but concentrated benefits in Punjab, Haryana, and Andhra Pradesh.

The **Blue Revolution** (1985-present) targets India's fisheries and aquaculture, focusing on shrimp (*Litopenaeus vannamei*) culture and the second-largest aquaculture sector, contributing significantly to annual seafood exports.

Dr. Prasad S. Thenkabail is a Senior Scientist (ST) at the U.S. Geological Survey (USGS) – the agency's highest scientific rank – based at the Western Geographic Science Center in Flagstaff, Arizona. He holds a Ph.D. in Agricultural Engineering from The Ohio State University (1992), and ranks in the top 1% of scientists worldwide across all fields (22 scientific fields, 176 sub-fields) with an h-index of 58 and over 20,000 citations on Google Scholar.

His career has two pillars:

- Hyperspectral remote sensing of vegetation.** He pioneered the use of hyperspectral data to characterize agricultural crops, identifying narrow spectral bands most sensitive to biophysical variables like leaf area index, biomass, and nitrogen. His 2014 paper "Hyperspectral vegetation indices and their relationships with agricultural crop characteristics" has received over 1,500 citations. He edited the definitive *Remote Sensing Handbook* (Taylor & Francis, 3 volumes, 82 chapters, 2,000+ pages) and the four-volume *Hyperspectral Remote Sensing of Vegetation* – both considered encyclopedic standards.
- Global croplands mapping for food and water security.** He leads the Global Food Security-support Analysis Data (GFSAD) project, funded by NASA ROSES (2023-2028, ~\$2.7 million). His team produced the world's first Landsat-derived 30-meter global cropland extent product and the first 30-meter global rain-fed and irrigated cropland map – a paradigm shift over prior 250m-1km products. These maps distinguish irrigated from rain-fed agriculture, which is critical since croplands account for ~80% of all freshwater consumption by humans. The work supports the Group on Earth Observations (GEO) Global Agricultural Monitoring Initiative and directly informs G20 agriculture ministers' food security policies.

Bibliography

- Gulati, A. & Juneja, R. (2018). *Remote Sensing of Vegetation Indices and their Relationships with Agricultural Crop Characteristics*. Taylor & Francis.

Who is Prasad Thenkabail, and what have been his contributions to agriculture and NASA at the U.S. Geological Survey?

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Survey. Accessed July 2026.

- USGS Western Geographic Science Center. "New NASA ROSES Award for 5-years (2023-2028) for the Global Food-and-Water Security-support Analysis Data (GFSAD) Product." (<https://www.usgs.gov/centers/flagstaff/centers/geographic-science-center/news/new-nasa-roses-award>)

It is becoming increasingly difficult to reconcile the notion that super-AI is an incredible technology, while living with mundane expectations such as working a forty-hour week for slave-wagers under a direct capitalist system using systems of capital to broker wealth transfer detached from its work.

To put this in a way that sounds more capitalist: if super-AI is so good, the question of why would we even work is underwhelming. Why would we not supply the factory itself with the capital, and the supply chains organized around the distribution of goods and services from the factories to us?

What was I thinking in that Brooklyn kitchen those mornings waiting to take those phone calls? I was thinking that, maybe, I could become extraordinarily wealthy by doing what I loved, trying to solve a problem that would radically transform the world only for good, because it makes sense.

It still makes sense, otherwise I would not waste your time writing this. Can AI say the same thing?