



Journey to Planet Earth

**Transcript for Episode 03:
Land of Plenty, Land of Want**

Abridged Version

Journey to Planet Earth is produced by

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(Opening Montage)

Farming is often about faith. It's about waking each morning and praying that the rains will come -- or that your herd will stay healthy. It's about trying to keep a family together while coping with the frailties of the environment.

This is a program about farmers -- farmers in Zimbabwe, France, China, and the United States. Though separated by distance and culture, they all face the same critical issue: how to feed more and more people without impoverishing the land.

And with views from space our ancestors never could have imagined, we will see that farming is often about unexpected cycles of change. Planet Earth -- this is where our journey of discovery begins.

(Arid Zimbabwe Landscape)

In a remote corner of Zimbabwe, in Southern Africa, the rains are late by seven weeks. Watering holes and grasslands are disappearing. Wildlife begin to suffer. Elephants invade farms and pastures in search of food. An unforgiving sun turns hundreds of villages into dusty wastelands.

(The Dzangare Farm)

Small family homesteads are especially hard hit. Matias Dzangare and his wife have worked this land all their lives. Its always been a difficult existence. But the lack of rain is causing serious concerns. Food supplies are slowly dwindling. The villagers are in desperate need of help.

(Spirit Medium)

Several days later the dry land silence is broken by the prayers of a spirit medium. Cloaked in ceremonial black, Mbuy Chaibhira communicates with her ancestral spirits -- asking for rainfall that will bring life to the barren soil. What she doesn't know is that an unusually strong El Nino event has put her country on the brink of disaster.

(El Nino Visualization)

Remote sensing instruments high over the Pacific Ocean, analyze the developing weather phenomenon. Abnormally high sea-surface temperatures are indicated by the intense red color. Scientists issue an El Nino alert. For some it means torrential rains.

(Parched Land)

In Zimbabwe, it could mean a severe drought. Without rain, 13 million people face a possible famine.

(The Dzangare Farm)

Matias Dzangare spends more and more time with his grandchildren. Though some sense the impending danger, most of the children are unaware of the family's marginal existence. They rarely see their fathers who have been forced to move to urban centers in search of work. Leaving behind wives and children is not uncommon in Zimbabwe.

Despite the lack of rain, Matias' oldest grandchildren practice the skills they so badly need to become farmers. They've already experienced the consequences of a famine.

All Matias can do is hope that the spirit medium's prayers are answered.

(Computer Visualization)

High over Africa, satellites send back time-lapse photographs. They show dramatic loss of vegetation -- especially in southern Africa. With the height of the growing season only six weeks away, Zimbabwe's communal farms are slowly turning brown.

(The Dzangare Farm)

When the rains finally come -- they are six months late. Matias Dzangare's crop is meager. It will barely see him through another season.

(Reservoir)

Fortunately others are taking the battle for survival into their own hands. They include an elementary school principal who decided to build a dam.

David Jura

I built this one physically myself using these hands -- very tough. It all began in 1992 in April until 1995 on the fourteenth of December. That's when I put on finishing touches of this wall. It was pretty tough. So we are going to use this water here for irrigation -- for the communal people. They will benefit.

By providing local farmers with a reliable source of water, David Jura's dam has bettered the lives of thousands of people.

(Village Life)

With a patience forged by the rhythms of an ancient landscape, Zimbabwe's communal farmers continue their struggle against poverty. They are not unlike most other farmers throughout the world. They live on a thin edge -- an edge sharpened by poor harvests and drought.

It's happening in Zimbabwe -- it's happening all over the world...

(Brittany Coast)

...like the Northwest corner of France -- where farmers have their own set of problems.

This is a region of strong ocean currents and tidal changes. Sometimes at low tide the sea almost disappears from view -- only to come back hours later joined by the returning fishing fleets.

(Fishing Fleet; Fish Unloading)

After a night of trawling the Atlantic waters, the fishermen of Guilvinec prepare for the daily auction. In the past decade, Brittany's fishing community has dwindled from 60,000 to about 20,000.

(Fish Auction)

Over-fishing and pollution have devastated the local waters -- inexpensive imports have forced down prices -- driving many into bankruptcy. As a result, most of the region's young people have started new lives -- as farmers.

(Villages Surround Farms)

The inland villages of Brittany are astonishingly beautiful. Twenty years ago they were bordered by forests and wetlands teeming with wildlife. Today they are surrounded by cultivated farmland.

(Intensive Farming)

This is the nation's most intensive agricultural area. Almost every available acre is under cultivation. Unlike the farmers of Auvergne, Bretons use an extraordinary amount of chemicals. The result is a significant increase in yields which has helped France become Europe's leading exporter of agricultural products.

(Farming Near Sea)

In an effort to exploit every inch of arable ground, the land is farmed to the water's edge. Ironically, agricultural run-off has so polluted Brittany's rivers and coastal waters that it is partially responsible for the collapse of the local fisheries.

(Thierry Merret's farm)

No one questions that livelihoods in Brittany depend on agricultural production. The real question is, how to strike a balance between preserving the environment and safeguarding the region's economy?

Thierry Merret has found a way. His lettuce farm is the largest in this part of France. Yet, he has still managed to protect the surrounding waterways.

Thierry Merret

We can produce with less chemicals. I produce cheaper but it's also good for the soil, it's also good for the air and good for the water.

The farmers of Brittany are beginning to realize that they must resolve a fundamental issue -- the conflict between those that want to increase production and those who want to protect the environment.

(China - Faces)

Nowhere is this struggle more evident than in China -- the world's most populated country -- the awakening economic giant of Asia.

(Shanghai Waterfront)

Emerging from an early morning haze is Shanghai -- one of China's largest cities.

It's a modern, sprawling, riverside metropolis. Shanghai's markets overflow with fresh produce and once unimaginable luxuries like milk, eggs, and beef. In a sense the abundance of food is both a monument to the country's economic boom and a preview of China in the 21st century.

(Canal)

The story of China's agricultural success could very well begin here. Suzhou Creek cuts through the heart of Shanghai. Each day over 2000 barges bring in supplies to sustain a growing and hungry city. It's part of a network of canals that is a lifeline to another world -- to an ancient countryside that seems frozen in time.

(Countryside)

Yet it is here, in this seemingly unremarkable place, that a surprising agricultural drama is unfolding.

(Farming)

The Yangtze River Delta contains China's most fertile soil. On this flat, watery landscape, not far from Shanghai, every available acre of land is under cultivation.

Since the end of the Cultural Revolution per person food consumption in China has risen by almost 50%. In a country of over a billion and a quarter people, very few go hungry. Like the farms of Brittany, the land is intensely cultivated. Except here in the delta the yield is two and sometimes three harvests per year.

(Rice Harvest)

About a dozen people work this small state-owned rice farm. They are gathering stalks for use as organic fertilizer. Their labor is hard -- the hours long and back breaking. There are no tractors, combines, or thrashers here -- almost everything is done by hand. Yet these hard working people are a part of a true agricultural miracle. A miracle that feeds 22% of the planet's population with only 7% of the world's arable land. But in return for this fruitful bounty, land and water resources are beginning to suffer.

Each year China loses about one million acres of farmland to new factories and real estate development.

(Interior Of Factory)

Instead of 3 tons of rice, the yearly harvest is 120,000 pairs of trousers. Almost every worker was lured off the farm. Farming skills, honed year after year, are disappearing along with China's most productive land. Yang Jia harvested rice since she was a child. Three years ago she left the land to make more money in this garment factory.

(Village)

Today, her ancestral village is practically deserted. Only a few farmers and the elderly remain. Yang Jia's grandmother finds it hard to adjust. She doesn't quite understand why most of the younger people have moved to the city instead of working in the rice fields. Like most of China's older generation, the villagers do not greet each other with the Western phrase, "*How are you?*" Instead, the greeting is, "*Have you eaten today?*"

That most are now well-fed is an extraordinary achievement. But losing over a million acres of farmland each year means farmers have to be even more productive. If they fail, massive amounts of food will have to be imported. It's a possibility that's already having a major impact around the world --

(Iowa Night Harvest)

-- even on the lives of the farmers bound to the rich, black soil of Iowa. Here on the edge of the Great Plains, during the harvest the time of day is meaningless.

(Day Harvest)

Joe and Bill Horan are in the middle of an around the clock forty day sprint -- a race against time to bring in their corn and soybeans before the weather turns. An early frost or hail storm could ruin their entire crop.

Joe works in air-conditioned comfort at a steady six miles an hour. His brother Bill maintains the pace, receiving the grain that will eventually be trucked to nearby storage silos.

Their farm is about as far from China as you can get. Yet almost half their harvest will make its way to the burgeoning markets of Asia.

Bill Horan

Basically, a farm in the Midwest is a protein factory, and the whole idea is to produce as much protein per acre as we possibly can to feed the United States and the rest of the world.

(Landscapes)

From late September through early November Iowa's annual cycle of harvest never seems to end.

(Aerials)

Northern Iowa is a vision of agricultural stability -- row upon row of corn and soybeans stretch endlessly toward the horizon. The rich black earth of these farms, the earth that nurtures their crops, is actually a gift left behind from the last Ice Age.

(Glaciers)

Ten thousand years ago nearly a third of Iowa was covered with glaciers.

Over time, the climate changed -- temperatures rose -- and the ice slowly began to retreat. Left behind was some of the youngest and most fertile soil in the country.

(Horan Farm)

Joe and Bill Horan are corn-belt farmers of the new millennium. What separates them from previous generations is technology.

(Satellite Images)

High above, a network of military satellites scan the landscape -- not to pinpoint targets, but to tell farmers their exact position. Coupled with yield information from previous years, farmers can now manage their land by the square foot instead of by the acre.

(Inside Combine)

Joe Horan's on-board computer is linked to the satellites above. Called precision farming, he now knows exactly when and where to apply chemicals.

Joe Horan

We apply fertilizer and herbicides where needed, as needed. We live here. Our kids live here. We drink the water. We breathe the air. We try and be as good a steward of the soil as we can.

(Labs)

Elsewhere in Iowa space age laboratories dot the landscape. Here, research scientists create their own weather conditions. They are developing new high yielding seeds that are drought resistant and require less chemicals. It could have an enormous impact around the world -- especially in places like Zimbabwe.

As night slowly turns into day, the Horan brothers continue their race to bring in the harvest. They are a new breed of farmers who try to increase yields by experimenting with the latest advances in technology. It's an admirable goal and for now it seems to be working.

Yet, there are other places where people work the land according to a different set of practices.

(Sunrise in Pennsylvania)

Lancaster County, Pennsylvania is such a place.

(Kitchen)

Steve and Elias Groff's day begins with a leisurely cup of coffee.

Elias Groff

So, what I need today is at least 15 boxes of plum tomatoes.

Fifth and sixth generation Mennonite farmers, Steve and his father are deeply attached to the land.

(Farms)

Their 175-acre vegetable farm is located in the gently rolling hills of southern Pennsylvania.

Lancaster County is a community grounded in a strong work ethic dating back more than 250 years -- to the time when Amish and Mennonite immigrants came from Europe in search of religious freedom.

Their way of life has changed very little over the years. The more orthodox Amish cling to a lifestyle abandoned by the modern world. They do not drive cars and use mules and horses to pull their plows. The more liberal Mennonites rely on more contemporary means of transportation. Both see themselves as the custodians of one of the most productive non-irrigated counties in the United States.

(Plowing & Rain)

But, reminiscent of the dust bowl days, their precious land is continually exposed to the elements. Each year more than four million tons of Lancaster County's richest earth are washed away into nearby streams and rivers.

(Aerials)

Once, these farms averaged sixteen inches of the best topsoil in the world. Now, it's barely eight inches. The rest lies somewhere on the bottom of the Susquehanna River or the Chesapeake Bay.

(Rolling & Seeding)

The devastating cycle of topsoil loss does not exist on the Groff farm. When Steve joined the family business, he brought dramatic change. Instead of plowing the land, each Fall he plants a cover crop that is rolled onto the land to form a protective carpet.

Steve Groff

Some of my fields have not been tilled in any fashion for about 15 years. The reason I got away from plowing the soil was because I saw too much soil erosion. My soil was washing away when we had rain and since soil is my number one asset, I want to try to manage it in such a way to keep my soil in place.

Called no-till farming, Steve never exposes the soil to the elements.

(Seeding)

In the final step of the process, a specially designed tractor places the seeds for the vegetable crops directly into this natural mulch. The soil is never turned up. Several months later the land is ready to be harvested.

(Harvesting)

This is when Steve Groff's faith in no-till farming is justified. When his grandfather started farming tomatoes on this land, the yield was 15 tons to the acre. Today the farm's tomato yield is 40 tons per acre and equally important, soil erosion has been cut by over 90%.

Steve

I'm the third generation on this farm and I'm really proud of that, to be able to continue on the tradition of agriculture that has been in our family. And my mission or my goal in life, in regards to farming, is to be able to leave the soil in better condition than when I found it.

(Closing Montage)

There are no global views on the minds of these Pennsylvania farmers. No overseas markets for their produce. Yet, how they meet their economic needs while respecting their deeply held environmental beliefs speaks volumes to people all over the world.

For the people who work the land, who draw sustenance from the soil -- there are common bonds -- bonds that are renewed by each generation -- bringing new ideas -- new attitudes -- new hope.

Planet Earth. This is our home -- this is where our journey of discovery must begin.

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