

# California Drought Update

## by Patrick Ruckert

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<http://www.californiadroughtupdate.org>

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## Note to Readers:

We have a much longer report this week, since I have included as the last section a “**Special Report on the California Economy: A Reflection of the U.S. Economy and the Role of Agriculture.**” This report refutes the often repeated claim that agriculture in California is such an insignificant part of the state's economy that no matter how much damage the drought does it won't affect the GDP. In addition, this report presents how a real economy actually works, along with a discussion of the required approach on how to really solve the water crisis.

## Another 83,000 Acre-feet of Water is to be Dumped in the Ocean

The San Luis & Delta-Mendota Water Authority, in a statement posted this week, protests:

*“The Bureau of Reclamation is poised to dump up to 83,000 acre-feet of water – enough for a city like Sacramento for a year – into the ocean in the hope of avoiding a once-in-history salmon die-off on the Lower Klamath River.*

*“Throughout this severe drought, Reclamation has chosen to let go of over 120,000 acre-feet of stored water from Trinity Reservoir at the expense of Central Valley Project water users across California, including endangered species. While there is no proven benefit to salmon on the Lower Klamath River, other listed species have undoubtedly been harmed, such as winter-run salmon on the Sacramento River.*

*“The National Marine Fisheries Service has identified winter-run as one of eight priority species to prevent extinction. Other affected species include listed Coho salmon, Giant Garter Snake, and San Joaquin Kit Fox, migratory waterfowl and the once imperiled American Bald Eagle. Reclamation's choice to release water for highly speculative, unproven “benefits” is incomprehensible.”*

## \$70,000 Per Fish is All It Will Cost!

A *Modesto Bee* article on August 10 claims that a project that is designed to facilitate fish getting around the Don Pedro Reservoir will cost between \$70 million to \$150 million, and will benefit, maybe, as many as 500 to 1,000 salmon per year! The article, “TID questions fish passage around Don Pedro,” by John Holland, quotes Turlock Irrigation District board member Rob Santos: “If we're going to spend \$100,000 per fish, that's ridiculous,....”

What is this about? To quote the article:

*“The National Marine Fisheries Service has suggested that it will require a fish passage as a condition of new hydropower licenses from the Federal Energy Regulatory Commission. One would replace the 1966 license that led to the 1971 completion of Don Pedro. La Grange dates to 1893, long before licenses were required, but FERC ruled in 2012 that it needs one.”*

## **More Failed Wells**

Meanwhile, more wells are going dry. On August 6, it was reported that 60 wells had recently gone dry in Stanislaus County. The county is processing applications for assistance now.

And in Tuolumne County, more than 200 wells no longer provide water, according to a report on August 10 by *Capital Public Radio*.

Add these to the more than 1,000 wells that have gone dry in Tulare County.

## **Brown Threatens to Burn Down the State**

While the fire season is now underway, Governor Brown used the disaster of the Rocky Fire in Lake County, which is still not fully under control, to grandstand once again for his man-caused climate change bullshit.

As reported by the *Sacramento Bee* on August 6, Brown went to the fire and said, “The climate is unstable...” You can imagine, if the drought continues for a year or several years, California could literally burn up.”

## **Desalination**

The past few weeks has seen much more discussion of desalination. From a forum at Berkeley, where the presenters admitted that while they were told to not talk about desalination that is what must be done, to some interesting press articles. That is nice, but what must be done is to revive President John F. Kennedy's project of 50 years ago to build nuclear-powered desalination plants up and down the coast. See my report: “Nuclear-Powered Desalination in California– Parts I-IV.”

<http://www.californiadroughtupdate.org/2015/05/29/nuclear-powered-desalination-in-california-parts-i-iv/>

Since one of the arguments used against the expansion of desalination is the energy cost, an article at: [http://www.theregister.co.uk/2015/07/31/how\\_much\\_of\\_one\\_years\\_californian\\_energy\\_use\\_would\\_wipe\\_out\\_the\\_drought/](http://www.theregister.co.uk/2015/07/31/how_much_of_one_years_californian_energy_use_would_wipe_out_the_drought/), on July 31, by Lewis Page, demonstrates that the actual physical and financial cost of providing enough water for all the coastal cities of the state would be negligible. The article, “How much of ONE YEAR's Californian energy use would WIPE OUT the DROUGHT?,” states (excerpts):

*“Seventy per cent of the planet is covered in seawater, and handily a lot of that is right next to California's biggest cities. Seawater can be desalinated to make nice fresh water - and you don't have to distill it either. Reverse-osmosis technology has been scalable since the 1980s.*

*“So, in general it takes 7 kilowatt-hours to desalinate an entire tonne (1000 litres) of seawater in a reverse-osmosis plant. Thus the clever Dr Wolfram tells us we would need 994 trillion BTUs\* of energy to*

*desalinate the necessary 11 trillion gallons.*

*“That sounds like a lot of energy. But is it?”*

*“Not so much - not to a state like California, which according to the most recent figures gets through a cool 7,684.1 trillion BTUs of energy every single year. You could up that by 12 per cent for just one year and completely eliminate the drought. Or up it by 2 per cent for six years, etc.*

*“If you liked you could consider public supplies separately, as most Californian freshwater use is for agriculture. Public supply requirements are less than 8 billion gallons a day in California, as opposed to the 22bn gals a day the farmers need.*

*“How much energy would it take to desalinate all of the public supply, and let the farmers have all the water from the hills?”*

*“Dr Wolfram tells us: 264 trillion BTU annually, or a measly 3 per cent of the energy California already uses.*

*“What would it cost?”*

*“\$13.61 per month per Californian, using the Energy Information Administration's cost figure.*

*“Real world, you'd never need to let the farmers have all the rain and snow, and you'd use brackish water rather than sea brine - so the energy-bill figure would be a lot lower and the increase in carbon emissions would be insignificant, less than normal annual variation. On the other hand, the cost of building the desalination plants would push up the bills in the early years.”*

Another article, from *The New Yorker* by Amanda Little on July 22, “Can Desalination Counter the Drought?,” not only counters some of the anti-desalination claims, but gives the reader a sense that the building of desalination plants is about to take off. Some excerpts:

*“The whole ordeal does consume a lot of energy, but advances in reverse-osmosis technology have cut the total amount of energy used in desalination by about half in the past two decades. Add to that the fact that almost all of the freshwater consumed by the twenty-two million people of Southern California is imported, much of it pumped long distances, over mountains, from Northern California—a process that also burns lots of energy. All told, it takes about 3460 kilowatts per acre-foot to pump water from Northern California to San Diego; Carlsbad will use about thirty per cent more energy, five thousand kilowatts per acre-foot, to desalinate ocean water and deliver it to households, according to [Poseidon's report to the Department of Water Resources](#). That's a notable but not prohibitive difference, especially given that there's less and less water available for import. The Carlsbad plant will add five to seven dollars a month to the average household bill, but the San Diego Water Authority expects that, within about a decade, the desalinated water will become less expensive than imported water: as fresh supplies dwindle, the cost of water imported to Southern Californian cities has been climbing more than seven per cent a year.*

*“As for lingering concerns about the impact of desalination on marine life, the data is limited and vague. Globally, there has been little research showing any significant damage to fish populations. If anything, it appears that diverting large amounts of freshwater from rivers can be much more environmentally damaging than desalination, but it's hard to generalize given the primarily local impact of each desal plant. Scientists in California are typically less concerned about the ecological impacts of what comes out of desalination plants than about what goes in. The high-salinity discharge from the Carlsbad plant must, by California law, be diluted before it hits the brine pit. Four gallons of seawater is mixed with every gallon of effluent, which means that the water returning to the ocean has no more than twenty per cent higher salinity than the ocean water itself.*

*“Scientists do worry that fish larvae will get 'entrained' (sucked into the plant's intake), and that fish will get “impinged” (killed by getting pinned against the screen that prevents them from entering the plant).*

*There's no doubt that these phenomena occur; the question is on what scale. Eric Miller, a marine scientist at M.B.C., a firm that performs environmental assessments on industrial plants, including Carlsbad, found that among the three fish species that will be most affected by the plant—gobies, combtooth blennies, and northern anchovies—the effect is minimal. “On a population scale, it's a non-impact,” he said.*

*“Amid this ambiguity, the desal industry is drawing interest and investment in Southern California and beyond. Poseidon is planning to build another fifty-million-gallon-per-day desalination plant in Huntington Beach, which will supply suburbs of Los Angeles. Fourteen other mid- and large-scale plants have been proposed along the state's southern and northern coastlines. 'Carlsbad is a symbol of the dramatically changing economics of water in California,' Tim Quinn, the executive director of the Association of California Water Agencies, whose members deliver more than ninety per cent of the state's water supply, said. 'No matter how long the drought lasts, the time has come to reduce demands on imported water and develop local sources—sources that, twenty years ago, were unheard-of expensive, and now they're increasingly the backbone of our future supply.'”*

Finally, there is the article on August 8, “The role of water in Australia's uncertain future,” by Amgad Elmahdi, of the Australian Bureau of Meteorology, at:

<http://www.thebull.com.au/articles/a/54993-the-role-of-water-in-australia%27s-uncertain-future.html>

The article reports that there are 92 desalination plants in Australia, and they provide, for example, 39% of Perth's water and 41% of Adelaide's.

## **Special Report on the California Economy: A Reflection of the U.S. Economy and the Role of Agriculture**

It is often reported in the media that the damage being done to agriculture in California by the water crisis--created by more than 40 years of not building water infrastructure, including the planned projects of the 1960s (The North American Water and Power Alliance and the building of nuclear-powered desalination plants)-- will not have a significant impact on the economy, since agriculture makes up only about 2 percent of the state's GDP. For example a report on July 20, “Drought will have little impact on California economy, says Moody's,” by KPCC, states:

*"While the state's agricultural industry has national importance, it represents a very modest portion of the state's gross product and employment," says a new report by Moody's.*

*The credit rating agency Moody's said last week that California's drought would have little economic impact on the state in the short term.*

*"Of California's total 2013 GDP of almost \$2 trillion, just \$28 billion, or 1.4 percent, came from agriculture," the report says. 'The very small share of GDP that comes from agriculture is not due to any impact from the drought: The share of GDP coming from agriculture has ranged from 1.0 percent to 1.4 percent for more than 15 years.'*

*By comparison, the financial sector, which include banking and insurance, account for 36 percent of the state's GDP. Manufacturing accounts for about 12 percent....”*

The following report takes on the claim directly and demonstrates both its underlying falsehood, and discusses the nature of real physical economy. Keep in mind the last paragraph's claim in the quote above that the financial sector accounts for 36 percent of the state's GDP. The concluding section of this report is an extended excerpt from a presentation by Ben Deniston of the LaRouche PAC science team on what is a

real economy and the nature of water management systems, with a focus on the California water crisis.

First, the claim that agriculture is only two percent of the state's economy excludes the impact of the so-called “multiplier effect” that is produced by agriculture. Here are a few excerpts from the 2011 report by Michel Paggi, PhD, at California State University, titled, “California Agriculture’s Role in the Economy and Water Use Characteristics” (the figures are from 2007, so the totals have changed, but the impact is clear):

*“Agriculture creates significant multiplier effects throughout California’s economy. Every dollar gained in agriculture stimulates additional activity in the form of labor income, job creation and value added.*

*“Employment in agricultural related industries as of 2007 (this does not count farmers and ranchers which was 194,670).”* [Other reports state that the direct employment in the agricultural sector is about 400,000 people.]

*“Total employment in these industries was 1,871,503 of a total California labor force of 13,771,650. Therefore, combining farming, ranching and agricultural related industries gives a total of 2,066,173, or about 15 percent of the total state labor force.”*

Other reports state that the agricultural sector generates more than two-and-one-half times the dollar value of that directly produced by the farmers and ranchers. So, by sales of over \$46 billion per year in agricultural product, the state's 77,900 farms and ranches generated more than \$100 billion in other economic activity.

So, 15 percent of the labor force of the state is directly or indirectly dependent on agriculture. Here is a list of those sectors of the economy that encompasses, also from the report cited above:

- Food, beverage and tobacco manufacturing
- Textile mills
- Wood product manufacturing
- Paper manufacturing
- Pesticide, fertilizer and other agricultural chemical
- Farm machinery and equipment manufacturing
- Food product machinery manufacturing
- Grocery and related product merchant wholesalers
- Farm product raw material merchant wholesalers
- Beer, wine and distilled alcoholic beverage merchant wholesalers
- Grocery stores, supermarkets and convenience
- Specialty food stores
- Beer, wine and liquor stores
- Full-service restaurants
- Limited-service eating places
- Special food services
- Drinking places (alcoholic beverages)

That list should give you a better sense of what agriculture means for whole economy, and how it impacts the daily life of everyone of us.

To make the point in another way, the amount of land devoted to farming and ranching in California was 25.6 million acres in 2012. The average farm size is 327 acres, which is below the national average of 435

acres. So much for the hot air about California agriculture being just corporate farms.

As noted above, 36 percent of the state's GDP is generated by the financial sector. Think about that. More than one-third of the employment and economic activity involves moving money around. This is unprecedented in our history. As one banker put it, "We don't manufacture cars or anything; we manufacture money."

A healthy economy is one that is not only producing the real products and all that required to do so, its intent must also be to create a better future for coming generations. Such an economy must focus on scientific discovery, research and development, the building of infrastructure, the education of a continually more skilled labor force and the creation of a classical culture that unleashes the creativity of the population.

To actually measure whether an economy is healthy or not, we use the term developed by physical economist Lyndon LaRouche, "potential relative population density." Where potential population density is the measure of how many people can live in a specific geographical area and through their activity provide for all of their physical and cultural requirements. That number is relative to the level of technology that that society actually utilizes. A society of primitive agriculturalists may have a potential population density of 10 people per square mile. An advanced industrial/agricultural culture will obviously have a higher population potential. The actual density of population will vary depending on a wide array of factors.

When we look at the United States today, we see that over the past decades, with the shutting down of industry (accelerated by the free trade agreements), the virtual complete lack of building of infrastructure, and the escalating war against advanced agriculture, we see a collapsing potential population density. We no longer produce what we consume, whether that is increasingly our food supply, clothing, tools, and advanced equipment and machinery. We have an economy that cannot provide for our own population. As with any physical system, the lack of maintenance, new equipment, and the training of a new workforce, eventually brings that system to collapse.

This short summary does not require a lot of statistics and examples; most of us can provide a list off the top of our heads.

That leads to that amazing figure cited above: *36 percent of the economy is in financial services*, which includes banking, insurance, and real estate. An old joke posited that the way to achieve full-employment was to have everyone open a laundry, and everyone would have their clothes cleaned by someone else. Well, today something useful like that is not even done. Instead, Wall Street and all its spin-offs launder money. One example, from here in California. This state use to have more than 400,000 aerospace workers, used to have a steel industry and used to produce a significant portion of the nation's automobiles. Most of that is gone now. Instead we have more than 400,000 real estate agents.

To state it plainly: Money is worthless, absent the real productive value which is defined by the human mind. The first step to returning to the American System, as designed by our first Treasury Secretary Alexander Hamilton, is to restore the Glass-Steagall banking law, as originally designed by President Franklin D. Roosevelt.

In addition, in California, there are hundreds of thousands of people working in the ET sector, which produces some useful capabilities, but is mostly mere entertainment.

In fact, I would say that the only real productive sector of the entire California economy today is agriculture, which the so-called economists dismiss as virtually irrelevant.

But agriculture is taking the brunt of the damage from the water crisis, as water has been cut-off as a result of having built no water infrastructure for the past 40 years, and the actions of the State Water Board and the Bureau of Reclamation in diverting what water is in the reservoirs to saving fish. According to the U.S. Department of Agriculture, as many as 900,000 acres of land have been fallowed this year. Given that California produces one-half, or more, of the nation's fruits, vegetables and nuts, and exports to the rest of the world large amounts, the damage done is far greater than that suffered just by farmers in this state.

What follows below is the dialogue between Mathew Ogden and Ben Deniston from the LaRouche PAC Weekly Webcast of December 19, 2014. The entire webcast can be seen at:  
<https://www.youtube.com/watch?v=uJxQxvYHOL4>

The "Hamilton Principle Ogden mentioned refers to the principles and policies of U.S. Founding Father and the first U.S. Secretary of Treasury, Alexander Hamilton, who defined the role of the U.S. government as to be directing the credit of the economy toward increasing the physical productive capability of the nation, through industry and infrastructure. That is the intent of the Preamble of the U.S. Constitution:

*"We the people of the United States, in order to form a more perfect union, establish justice, insure domestic tranquility, provide for the common defense, promote the general welfare, and secure the blessings of liberty to ourselves and our posterity, do ordain and establish this Constitution for the United States of America."*

The BRICS nations are Brazil, Russia, Indian, China and South Africa, who last July established a new global economic system based on the development of the physical economy, not financial speculation. In other words an American System and Hamiltonian policy.

Deniston directly addresses the California Drought in his remarks, emphasizing the point that only by the creative power of the human mind has mankind not only solved so-called "resource limitations," but it is through the mind that mankind evolves to higher and higher levels of existence. As for the supply of water, an entirely new, scientific approach is required.

Here is the transcript:

*OGDEN: Good. Thank you. Now, for our final question, I would just like to pursue what Mr. LaRouche has identified as the "Hamilton principle," a little bit more in depth. And just to return to our initial subject here tonight, which was the publication of this very impressive list of signators on the petition calling on the United States to join the BRICS, I think it's necessary to emphasize that this new paradigm, which the BRICS represents, is not just an extension of the current system of government, or the current axioms of thought which dominate politics and economics today, or even the scientific and culture world, for that matter.*

*You're talking about an entirely new understanding of what mankind is as a species and what the fundamental principles underlying economics must be, as well as the basic political organization of society in general.*

*This type of political revolution which is urgently necessary for mankind's survival on the short term, requires and must be premised upon a fundamental scientific and philosophical revolution in the basic outlook of mankind, both his view of himself, and in terms of his relationship to the universe more generally.*

*And what the Hamilton principle implies is that money is worthless, absent the real productive value which*

*is defined by the human mind. Measurement of economic value is not something which is measured by money, but by the successive revolutions in man's influence over the Solar System. Now, obviously, this implied in what the "U.S. Must Join BRICS" petition calls for, and we must base this new paradigm on a principle of human economy which clearly distinguishes between man and beast, and defines a positive principle of what the human species is, and the role that we must play.*

*So, to address this a little more in depth, I'd like to ask Benjamin Deniston to come to the podium.*

*BENJAMIN DENISTON: Thanks, Matthew. So, I would like to just take a couple minutes and underscore Mr. LaRouche's views on this issue. As you said, Matthew, Lyn has emphasized that this is not just -- you know, it's a dramatic world situation, but this is not just an opportunity to fix the current world system as it is, but to actually create an entire new stage for mankind. And a new stage that has to be premised on what Mr. LaRouche has called "a scientific understanding of the distinction of mankind from the animals"; together with what his wife, Helga Zepp-LaRouche has called for as "a new paradigm for mankind." And I would say we might even call this the science behind what Chinese President Xi Jinping has called the "win-win cooperation policy."*

*So the crucial issue is this scientific understanding of the unique nature of the human species. Or, to put it otherwise, the difference between man and animal, as Mr. LaRouche has continued to emphasize the point. Now, animals progress in a certain way, animal life progresses, by evolution, the systems of animals as a whole will increase its anti-entropy. This what the great Russian scientific Vernadsky recognized in what he called as his biogeochemical principle. But this type of advance is in a sense, an involuntary advance. It's an involuntary turnover of one species to the next, with one species being replaced by a higher order species. So while the whole process of animal life in the history of this planet has moved forward, has been anti-entropic in a certain sense, any one species in that process has been fixed, biologically fixed by the conditions it participates in.*

*But mankind is different: Mankind progresses but not biologically. Mankind progresses only by the unique powers of creative human thought. Now this can actually be illustrated relatively easily, if you just compare what you might call the ecological characteristics of any animal species with the ecological characteristics of mankind: Start with something like carrying capacity, or maximum potential population. The carrying capacity of any single animal species will be fixed, it'll be an externally defined fixed function. The carrying capacity for the human species, the potential of the human species to have a larger and larger population is a variable function, not a fixed function, and it's not externally defined, but it's self-defined by mankind's own creative capabilities.*

*So the difference between man and animal, is not a quantity, it's not a value, it's a different principle. Any animal species can be defined by a particular value. Mankind cannot be defined by a value; mankind is defined by the unique ability to change the value, willfully, of the entire species as a whole. So now, what does this mean in practice? Why would we say this is the "science behind a 'win-win' BRICS cooperation policy"? Well, this means for mankind that wealth is not something that man just finds in places. Value is not something that we just go out and find. Value is something that mankind creates by this type of process.*

*So I want to take one example to illustrate this, which is the current water crisis. I want to highlight this, because some NASA scientists just released a new study, which focused on California, which shows that California now needs something like 11 trillion gallons of water or nearly 42 cubic km of water, just to recover from the current drought. Now, to put those very large numbers into some type of perspective: California's allocation of the Colorado River, one of the largest sources of water for California, especially southern California, is somewhere around 4-5 cubic km per year. So, as a thought-experiment -- we couldn't actually do this, because the water is needed for other places, but, as a thought-experiment, if we were to double California's allocation of the Colorado River, as an example, it would still take over eight*



*years, just to match the current deficit that now exists; and that wouldn't even account for the continued building of a greater deficit over that eight-year period.*

*This will give you a scale of the crisis now hitting California.*

*But it's not just California, it's the whole Southwestern United States is in a major drought; and it's not just the United States. China needs water. Australia needs water. The nations of North Africa, of the Middle East, and of Central Asia all need water. Water is a huge issue for the coming period.*

*But, remember that we're talking about water, we're talking about something that covers the majority of the entire Earth's surface. There is no actual lack of water, on this planet per se; there's a lack of the application of the type of resource-creating, creative human improvement of the system: That's what's lacking.*

*The existing freshwater supplies we're looking at, they don't exist in finite stores, finite amounts, but you're talking about cycles, you're talking about natural cycles of water moving from the ocean to the land, back into the ocean again. You're talking about cycles of a process of evaporation, precipitation and run-off back into the ocean, all of which is ultimately powered by the Sun, so that defines the process in which we're working here. So we can't talk about just amounts of water, but we're talking about rates of cycles, or the rates of activity of cycles.*

*Now, to return to the issue here. For animals, the rate of any local or regional cycle, if it's too low, the animals can't do anything; if there's not enough water, then more advanced animal life will just not be able to exist in the region; and the region is left to be taken over by lower forms of life.*

*But obviously as we know, for mankind this is different: Mankind can control and change existing cycles. Mankind can take an existing water cycle on the scale of a continent, and mankind can actually increase the productivity of that entire water cycle; can increase the wealth and the value created by that entire water cycle, by river management, by river diversion systems. What Franklin Roosevelt did with the Tennessee Valley Authority; what China is now doing with their South Water North program, and what the U.S. should have done with NAWAPA, decades ago. That's one aspect.*

*But we can go further: Mankind can create new cycles. We can use desalination systems to create our own freshwater, freeing ourselves on relying on solar activity alone, to create freshwater supplies. We can begin to develop weather modification technologies to potentially manage and modulate atmospheric moisture flows. So if you look at the potential available to mankind today, you could say it might take a little bit of time, and it would certainly take a lot of work, but there's no intrinsic reason why mankind couldn't address all of the water needs, for even a much larger population that we have on the planet today.*

*We can create the needed resources, specifically by increasing the energy-flux density of mankind's activity per capita and per square kilometer, per area. Especially what'll be critical for this is the development of fission and fusion technologies and economics systems.*

*So stating that, posing that, I think it's worth stepping back and reflecting on the implications of what we're talking about. Obviously no animal could do this. What we're looking at, mankind beginning to take on a certain role on the planet as a whole: We're looking at mankind taking on a global influence, and management of the biosphere as a whole, of the global water system as a whole, which has until now, solely been the domain of action of the Sun itself. So in a sense, you're looking at mankind taking on the role of force on the planet, that the Sun has otherwise played, and we'll probably surpass and overtake the role of the Sun, at some point, in terms of our ability to manage and improve the terrestrial water system. But to do that will probably require our own mastery of the principle of the Sun, here on Earth, through the*

*application of fusion power:*

*Now obviously, water, that's one example, but that's an expression of what mankind is, as a species, the ability to create through human creative action, the types of resources needed, and apply this to everything -- to food, to materials, to industry, to power, so on. As {Executive Intelligence Review} has presented in their new, full global program "The New Silk Road Becomes the World Land-Bridge," mankind now has at its fingertips, really, the potential to address the needs of the entire world population, through infrastructure, technology, science-driver programs, the recognizing that when mankind applies itself in these ways, we literally create the resources, create the wealth, create the value which will not only support a larger population than we have now, but can support a larger population at a higher living standard than we currently have.*

*Mankind does not find wealth, he creates it; mankind is different than any animal species on this planet. And ultimately this is, really, what you could call the scientific basis underlying the scientific validity of President Xi Jinping's policy of this "win-win cooperation." We're not talking about charity or sacrificing, although there's nothing wrong with those concepts, but we don't need to have charity or sacrifice to split a finite amount of wealth on this planet: With this type of "win-win cooperation" pursuing this unique creative ability of mankind, we can as a whole bring mankind to a higher level. We can create the type of revolutionary advance that moves the entire human species to a new stage.*

*And this is what's natural. This is what makes the human species truly human, and I think Mr. LaRouche would want to underscore and emphasize that it goes further than even what we're talking about so far, here. It goes to the Moon; it goes to what China is doing on the Moon, where you have, on the Moon -- and this is what China is now looking at with some of their leading scientists -- you have on the Moon, this strange dust, this very fine, very abrasive material, frankly somewhat nasty stuff -- it wasn't very inviting to the Apollo astronauts who landed on the Moon decades ago; but you have this fine, abrasive dust covering the entire surface of the Moon. But in this surface layer, in this otherwise worthless and if anything, annoying, dust, you have built up over billions of years a very significant accumulation of this wonderful little isotope, this one type of helium, helium-3.*

*So we're looking at the ability of the prospect, of mankind going to the Moon, taking this otherwise, frustrating dust, and potentially using this and turning it into the most powerful energy source, the highest energy-flux density source of power to available to mankind today, with advanced forms of helium-3 fusion. And we'll be forced, as Mr. LaRouche has emphasized since his becoming familiar with China's lunar program and the prospects of this type of mission, we'll be forced to look at mankind completely differently in the process of accomplishing this mission. We'll have to recognize that no longer is mankind a species on this Earth alone; that our existence on Earth will literally be redefined from the standpoint of our more powerful and higher-order existence in the Solar System as a whole. Just as Kepler was the one that really first taught us this principle.*

*We may remain for the most part physically on Earth, most people, most of the time. But even people living on Earth, their existence will increasingly be redefined by this larger process. Even our existence on Earth, will be redefined by mankind's changed relationship not just to the planet, but the whole Solar System. And I think, ultimately, from the standpoint of where mankind is at today, that is our source of wealth, that is our source of value. And that is the potential right now, before us, with this concept of the U.S. joining a "win-win policy" premised on the development of the creative powers of the human species, as a unique species, different than animals, which is defined by this ability to constantly revolutionize our relationship to the universe.*