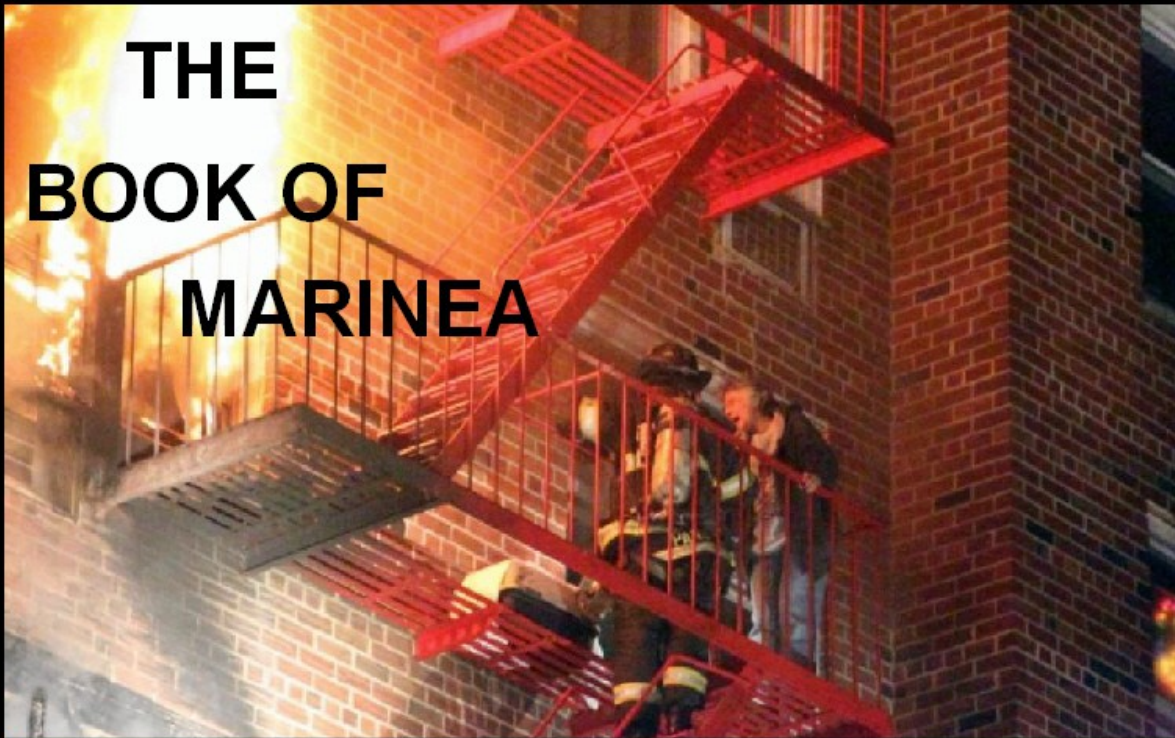


What Is Our Future?

And Can Technology Save Us?



Our world is on fire!!!

The causes, the problems, and the solutions are
contained within these pages.

Action is the Foundational Key to all Success

You Are The Movement

Sometimes the answer to our problems is as clear as pure water, sometimes it's not. When that happens it is usually because we don't understand the real problem that is causing undesirable outcomes. We treat the symptoms but not the cause of those symptoms. To fix anything we must first understand what the real problem is.

Let's take climate change for example. It has been proposed that humans need to drastically reduce their carbon emissions and quickly, before it is too late to do anything. Will that fix the problem? No. There is already an effect that will add more carbon in a short period of time without any human assistance. Once the ice glaciers melt, all of the locked up CO₂ (the carbon dioxide greenhouse gas that has started the warm up) and the more potent methane, will flood into the atmosphere.

To be fair, no one really knows what would happen if the carbon in the air went from .4% to say .8%. (Nitrogen makes up 78% of our atmosphere, oxygen 21%). High smog days do cause respiratory effects, so it can't be just dismissed. Plus, there is something that can be done about it. However assuming the worst, let's follow the argument of climate change.

The melting ice will flow into the sea causing multiple effects. The ocean levels will rise drowning all low lying islands and seashores, displacing the people living there. The water from the ice is lighter than salt water. The feeding stock for all the fish in the sea is plankton which would die in fresh water as they have grown used to the salt water oceans. No food, no fish.

Plants give off oxygen, that is also true of ocean plants. As the ocean water temperature increases, the water can hold less and less oxygen. Fish and other marine creatures need oxygen or they will quit reproducing and eventually die.

Three problems with one cause, too much carbon in the air. It would do no good trying to fix any one of those problems because those problems are only the symptoms of a bigger problem. Now here's the kicker, climate change is also only the symptom, not the main problem. If trying to fix the ocean level increase without addressing the climate problem is bound to fail, then trying to fix the climate change without addressing it's main source won't work any better.

Climate change was caused to some part by humans needing to produce more of everything to take care of the needs of the people. But while climate changes is only a symptom of the first cause, so is war, disease, street riots and poverty. Where climate change is killing the Earth's oceans to some degree, these other problems are killing humans directly.

So what is the first cause? The one problem that has created so many others, is that human beings have out grown our planet's ability to provide for us in a manner that we are comfortable with. There are too many people that need the limited available products like food, clothing, shelter and energy. The cities are too crowded, there is no room for growth and without that, there is hopelessness. Without the opportunity of gainful employment, hopelessness will drive a soul to crime, living off others and drug use. Fix hopelessness and you will reduce a host of problems including crime, violence and poverty.

Here is the reality of our situation, it took over six thousand years for the human population to hit one billion people. That happened back in 1803. It took over a hundred years for us to hit two billion and each successive billion required less and less time. By the year 2012, our population topped seven billion and by 2024, we expect to reach eight billion people living on this planet. By the 2050s we will hit ten billion people all trying to live where we began having problems feeding half that many. How

will we do it?

There is a way to handle the population explosion and all of the dire consequences resulting from that one initial cause. The solution, like so many others, is actually quite simple once it has been laid out clearly. That is what I hope to accomplish in this booklet. We as a people can fix the problems of the world without the help of governments, but not without their cooperation. We need to be united in our efforts and not let greed or other such emotions distract us. Governments may have their own agenda but governments are also made up of people and all people will benefit when we solve the first cause, the population explosion problem.

We begin with wondering how we can have a population problem on a planet with almost 200 million square miles of surface. That means that at 7.5 billion people, we have a population density of just 38 people per square mile. In other words, we have over 16 acres per person, so what is the problem? Humans have traditionally lived on land and over 70 percent of the Earth is water. But with 30 percent land, that still is only 127 people per square mile or 5 acres per person.

Unfortunately, according to utexas.edu about half of that land is either under a half mile of ice or dry desert or rocky mountains. That leaves just 13 percent of the surface of this planet that is somewhat inhabitable by humans. Approximately 2 and a half acres per person would still be enough to feed everyone but we use a large amount of that land for parks and recreation, business, housing, pastures for livestock and wild animals, I think you get the idea. Now add one third more people and you can see that we are at breakdown level. At some point, there is a maximum reached, where the amount of food and shelter available is no longer able to provide for everyone. Read the news, the time has just about come where we have reached that breaking point.

Now this simply means that we can no longer afford to be inefficient with our resources and we can no longer limit our thinking to only what has been done in the past. In years past, when game was plentiful, we could eat all year long on what we took from the wild. That is no longer possible but we no longer need to make our living that way. Man has replaced the old hunter/gatherer techniques with new farming methods. Ask yourself why chickens have not become extinct? If humans only hunted them, they would have been extinct long ago but we can help nature by farming and ranching.

Today, our source of fish is running out. The amount of fish and the size of the catch have decreased to the point that many fishing boats are taken out of commission and the crews are off doing other jobs. The oceans are dying from neglect. While more 'non food' fish are killed as by-catch then tossed back, than the amount of food fish caught with our current hunter/gather methods. The solution is to begin farming our oceans and to begin farming communities that will provide for the needs of those farmers and ranchers.



The idea of colonizing the oceans is not exactly new: there have been some meager attempts to start new nations on islands, boats and even on an old world war II observation tower abandoned after the war. But these people were not researching new ways to live or fish or anything productive, they were trying to get away from their home country for whatever reason. However, we can still learn from their successes and their failures.

In this booklet, we will discuss the needs for intelligent ocean colonization and methods to accomplish it. After much debate and false starts, we have designed the most practical and cost efficient way to begin our venture into workable ocean colonies. That plan is presented here in hopes of encouraging the adventurer and the technician, the farmer and businessmen, to consider the opportunities that await in the new world.

As this is the introduction, I now have the honor of introducing

'The Marinea Research Project into Sustainable Ocean Colonization', or simply ... Marinea.

Part 1

The Problems That We Are Addressing

Climate change, food and shelter scarcity, plague, urban violence, wars population control.

Part 2

History

Many starts, Seastead Institute and the relations in the sea development community.

Part 3

Goals

Four main goals, what they look like in use.

Part 4

The First Colony

Structure, main starter businesses, marina,

Part 5

Sea Farms

Algae/kelp, feeder-fish, fish, seafood (shrimp, lobster, crab, conch, mussels), vegetable barges.

Part 6

Other Businesses

Homes, real-estate, Boat and barge construction and repair, clubs, retail, algae product production, sea world, schools, and research.

Part 7

First developments

Hospital, personal travels, banking

Part 8

Governments

Development and associating with other countries.

Part 9

The benefits of Marinea

Along with addressing the big problems that we all face together, there are a number of personal benefits as well.

Part 10

The Marinea Project

Why the Marinea Project. Where we are and what we are doing.

Part 1: The problems that we are addressing.

The problem simply put is this, we have out grown our available livable area. According to learner.org Human Population Dynamics: World Population Growth Through History, this is how the problem developed.

World population reached:	Year	Time to add 1 billion
1 billion	1804	Thousands of years
2 billion	1927	123 years
3 billion	1960	33 years
4 billion	1974	14 years
5 billion	1987	13 years
6 billion	1999	12 years
7 billion	2012	13 years
7.5 billion	2018	Currently over 7.5 billion
8 billion	2025	13 years - projected
9 billion	2040	15 years - projected
10 billion	2058	18 years - projected

These projection do not include the recent policy change in the most populated country on Earth, China, which has reversed its one child policy. We have no idea what this will mean to our max capacity projections.

Just what max capacity is, depends on what you use as a determining guide. Harvard University socio-biologist Edward O. Wilson, bases his estimate on calculations of the Earth's available resources.

He reasoned that Earth can't grow, so his calculations would fairly represent a probability. He stated that even in the case of maximum efficiency, using all crops to feed humans (no livestock), and everyone agreed to become vegetarians, the present 3.5 billion acres would support about 10 billion people.

If the entire world ate both meat and veggies like Americans do, the available land area would only feed between 2 and 3 billion. Humans have improved their crop production per acre through the use of modern farming techniques while still gathering fish from the wild. This has brought on its own set of problems, such as depleting the oceans of wild fish and other seafood, as well as depleting the soil's nutrients.

It is true that we are almost feeding the 7.5 billion people currently inhabiting the planet, but to do so

means that many are going under fed. These verifiable facts indicate that we are at a turning point. What is more, those projections assume there is an abundant supply of fresh water for humans, crops and other life.

There is a limit to how much fresh water the skies can supply. California used to get all the water it needed from the run off in the mountains. Today they are pumping water from the ocean, desalinizing it, purifying it and conserving as much of it as they can. Clean fresh water is scarce and getting scarcer. Investors are buying into water, they think that water will be a most marketable item. It is only reasonable that if we double our population, we will double the amount of water needed.

Another disturbing fact about the water supply is that it is not fixed. As we add more people to the population, the amount of carbon discharged into the air grows and changes the weather cycle in what has become known as climate change.

Entire books have been written on the validity and severity of climate change, yet there are still some that don't believe it. Why? Because we are all humans and a group of people will behave similar to the average. People have a natural shock absorber built in to us called denial. It gives us time to gather the data and begin to make changes. Sooner or later we will all come to agree that carbon in the air is not a good thing and probably has some harmful effects. However, it will be some time before mankind takes responsibility for the pollution and fixes it. The solution, when it comes, will have to include some way to make a profit for reducing carbon instead of bearing a loss which everyone who has to pay it, will fight against.

Changing weather patterns is just the beginning. The added carbon in the air is increasing global temperatures mostly in the cooler regions. As the oceans get warmer, more of the surface waters will evaporate into the air which begins to move more rapidly toward cooler lands and falls out in heavier rain showers and hurricanes. Not only the number but the intensity of hurricanes seem to be growing giving us an indication on where we are in the development of these problems.

While the equator area is producing more hurricanes with its added heat, the poles are changing somewhat differently. The ice sheets are melting. The ice sheets that are over ocean water will not change the ocean levels very much but those over land sure do. There is a real concern for islands and coastal areas that they may be under water within the next 50 to 100 years or so. A 10 foot rise in the ocean levels will eliminate most of the Bahamas, where will these people go?

While we are having an increase in the population, we are seeing a decrease in availability of inhabitable land. This is already happening in the lowlands of South Carolina and Louisiana where the once inhabitable islands have already disappeared under the sea. With these observable occurrences evident, it is difficult to argue that climate change doesn't exist, but the question of how much man's involvement contributes to the over all effect is still unknown.

The change of carbon in the air, warmer temperatures, etc. due to mankind's activities is an important question because all the suggestion for a remedy is reducing man's contributions. This would indeed seem rational assuming that man's involvement is the largest portion of the total cause of change. However, if man's portion is small, say 10%, then if we limit man's carbon production to half, causing an unfathomable amount of financial pain, we would only be reducing the total by 5%, not enough to be a meaningful solution to any problem.

Food scarcity will mean more land must be used to grow food and less land available for human

occupancy. This trend has driven humans to cluster together in cities where they live on top of each other, quite literally, sometime over 50 levels. In such a crowded state when one person sneezes, 100 people catch a cold. Every epidemic that we read about happened in the cities where crowds can pass on the viruses more easily.

In addition to the sanitation problems, every city has its impoverished areas traditionally called slums. This is where everyone that fails to compete successfully tends to dwell. Once in the slums, it is hard to get out. Young people find a new way to exist that doesn't require any hope because there is very little of that. In impoverished areas like this, violence is learned young and soon becomes man's first line of defense for just about everything. Gang violence is a natural outcome of over crowding.

Even in simple creatures like fish, if you put too many of them in a bowl that is too small for them, you will soon end up with dead fish. Even if you double their food supply, the extra food clouds the waters and decreases the oxygen supply. Normally docile fish will become predators, living off of their neighbors, in over crowded situations. The same is true with chickens, in crowded coops, you will see a group of chickens all pecking a weak chicken to death. What is true in nature also affects humans. In the country, people help neighbors secure their stuff. In the cities people help themselves to securing their neighbors stuff.

What is true for the cities is also true for the nations - but when hostilities break out, we call it war. The same reasons that drive violence in the cities drives violence at the federal level. There is always some group that feels margined out and must turn to the use of force. If there was enough land, sects wanting a religious government could have all they needed and the same is true for the other side. The wars in the middle east may never have happened, even though most of it was over oil, if there was enough profitable land available.

War is how countries controlled the population. Plague is how the population is controlled in the cities. After all this time, one would have to think that there must be a better way of controlling the population than killing people. China tried to control it by putting a limit on births. When that happened, China was the most populated place in the world. Today after limiting births for several decades, China is still the most populated place on the planet. Limits just don't seem to work.

Did you notice that the time between one billion and the next kept getting shorter but in all the projections for the future, the time laps get longer? The official answer to this is that people will begin to limit their own child births as a matter of conscience. It didn't work with the Chinese, but it will work with the rest of the world... However, we might want to brace ourselves for a little disappointment on this one. The real reason that it may begin to take longer between those billion population markers is due to the added probability of war and disease that always accompanies over-crowding.

Let me explain why we say that there will be one third more people in the next 40 years or so. Population expectations for 2058 is 10 billion, the difference between then and now is $10B - 7.5B = 2.5B$. $2.5B$ more people divided by the current population of $7.5B = 33.33\%$ more people which is one third more than we have now. How are we going to feed $1/3$ more people? Cloth $1/3$ more people and shelter them all?

If 10 billion is the limit for the amount of food that the planet can produce if everyone becomes a vegetarian, the amount of energy that we can produce is another limiting factor. To grow food

efficiently requires a lot of energy. Thanks to some technological advances, our oil production is stable for the time being but please understand, this is only a reprieve. We will face another, even bigger shortage in the near future if we don't make some serious changes.

I'm not talking about solar powered cars, even though that may happen someday. The problem with existing alternative energy sources is that it is hard to store that energy until needed. Our technology is somewhat behind the demand for light weight batteries. Hydrogen is a possible solution but it is very explosive and still takes energy to produce it. Fuel oil will burn but not explode, so it is currently the best way to transport energy to where and when it is needed. The best alternative energy then would be to produce fuel oil instead of drilling for it. Fuel oil can be produced from plants but if we begin to use more corn for fuel, we will have less land to grow food.

It's all kind of hopeless - if we look to doing the same things that got us into this mess. As we add more people, the problems will become more intense just as hurricanes are becoming more intense as we add more heat to the atmosphere. Taxes will have to grow so governments can feed more of its people. Food costs will rise, as will every other commodity that is based on energy usage. Freedoms will be lost as more people will create a police state to combat all the crime and to feel somewhat safe. True safety will be lost early on. Prisons will increase but the treatment will be less than humane. Most likely we will see a resurrection of forced labor prison camps.

Well with climate change, food/shelter scarcity, potential plague scenario, urban violence, wars and their use in population control, freedom and prisons, we have a lot to work on. But fortunately, that whole list of problems is actually just a different view point of one problem that is causing all of the others, we simply need a bigger planet.

There is some real progress going on with space exportation, but unfortunately that progress will not be sufficient to be a workable solution to the current over population problems. We will just have to find more room for humans right here on this planet. However, the news isn't all bad. Over-population is a problem, but one that can be dealt with. We simply need to use more of the planet that we all live on.

We are currently using only about 13% of the surface of the Earth and almost nothing above it or below it. We can't use the north and south poles easily because there is not enough energy for any significant number of people to survive there. In other words, it's too cold. No one could grow anything so food will have to be imported.

Likewise deserts are too hot to live comfortably if at all. The lack of water is the main problem in these areas. We can shield ourselves from the cold and heat but food and water will still be a limiting factor for usability. Rocky mountainous areas can be Terra-formed easier than the extreme hot or cold areas, but governments have laid claim to most of those areas anyway and made them into parks and recreational areas.

That just leaves the oceans. Saltwater oceans and seas comprise 70% of the surface of the Earth. Some of it is in frozen climates but a large portion of the oceans are in moderate and tropical areas. Ocean front property doesn't come at a premium either because its all ocean front property.

As for water, we can't drink saltwater but since there is an abundance of free energy, we can desalinate the saltwater and have pure drinkable water. But it rains a lot in the oceans and that too is a free source of water good for growing fruits and vegetables, livestock as well as direct human needs.

The limiting factor at sea is that there is very little employment and the nearest grocery store is a hundred miles or more in any direction. However, we can fix that. There is actually enough potential work there to put the entire human population to work, but there is no infrastructure there to allow for its development. That's where we come in.

We have identified the problem facing our future habitat and know how to fix it, but that won't resolve anything until we put the plan into action. For that, we need to create a pilot project to see what we would actually need, but also to show everyone else that living a life of freedom at sea is not only doable but for many, preferable.

Let's look at just one news worthy item that can be fixed by having ocean colonies. The proposed boarder wall may keep a lot of hungry refugees from invading the US in hopes of some reasonable future, but it won't feed those people. However, if the millions that it would cost to build a wall between the US and Mexico was used to build barges and boats, those people could have a safe place to work and live, contributing to the wealth and well-being of the planet instead of being a burden to it.

Part 2: History

An interesting bit of history was the absolute knowledge that no one could break the 4 minute mile. And that was true for thousands of years until 1954 when a skinny Englishman named Roger Bannister did it. The amazing part is yet to come, since 1954 there have been over 1400 men to break that unbreakable barrier and one man Daniel Komen of Kenya ran two miles in less than eight minutes. The point of that is that once something has been done, it's doable and others will follow.

In that respect we salute those wild eyed dreamers who have gone before us blazing the way for the eventual time when man moves out to the oceans. We won't belabor their individual accomplishments and failures but we can see from their efforts that there have been dreams of living at sea for many years and many reasons. Some just wanted to get away from their government and wished to start their own country. And others like famed actor Humphrey Bogart possibly quoting Hemingway said, "the Sea is the last free place on Earth". That type of freedom is felt in the soul, not describable with word or pictures.

One group in New York built their own boat to live on, it sunk. It's the price men have been willing to risk to answer that "call of the sea". But mostly people who live at sea do so for their work, usually on the backs of ships or oil derricks. There is a group of retirees that have purchased a used luxury cruise liner to live and travel the world in. Others just buy boats.

People have been living on boats and barges since the time of the early Egyptians. But no one had a compelling reason to live permanently at sea. It wasn't until the 21st century that we started to realize that we had a serious population problem. Now the sea has become our last best hope for any type of meaningful life in the not too distant future.

So there were many threads to the current line and we really can't talk about how this current Seasteading movement got started without realizing that no one really started it. It has been getting started throughout history building upon the successes and failures of others.

Today however, we have many more tools to work with, including education and the internet. We have retired architects helping with future designs, engineers and techs discussing the different materials and designs that will aid in the functionality of the operational seastead. Corporations from the Netherlands to Columbia are gearing up to build seasteads. Prototypes of individual ocean homes are being built and tested around the world. And then there is the Marinea project which we will get to in just a bit.

The Seasteading story really began in 2008 when investor/philanthropist Peter Thiel gave political and economic theorist Patri Friedman, who is the grandson of the Nobel Prize winner Milton Friedman, one million dollars to start the Seastead Institute in California's Silicon Valley area. It was this group that first made the term Seasteading popular though it was used in a book prior to that. While Ocean Colonization is a little different, today these terms are used interchangeably. It took some time to get their feet under them but they have made an agreement with a couple of governments, like the French Polynesia Islands, to develop a floating island. Like a lot of start up concerns, it struggled with capitalization. Our project members were not surprised when the South-Seas project failed but we were saddened non-the-less. We recognized that they didn't have a marketable product to sustain them. We had just developed ours.

The one thing that the Seastead Institute was able to do was to set up a forum for all those interested in developing some type of seastead to meet and compare ideas. One of the first ideas was to understand how any ocean project could be started with as little money as possible. This was the beginning of the Marinea pilot project.

While there are members of SI (Seastead Institute) working on floating homes and other projects, the idea of an ocean community was initiated by the Marinea Project. The idea was to get something started for as little capital expense as possible and grow from there, rather than to try to build floating islands or even floating homes. The pilot project chose to use currently existing technology and build from there using the actual experience of living on the water as our guide.

This history was condensed to shorten the number of pages. If you would like a more complete history see the article Case Studies - Historical Attempts at Founding New Libertarian Countries in the [library](#) section of the Marinea website.

Part 3: Goals

There are four main goals to the project. Goals differ from the reasons for the project as goals are also guidelines. The first one is that the project needs to be self sufficient, meaning we have to be able to make a living without still being overly dependent on land. It's not that we can't buy things from the mainland and have it delivered by a supply boat but that we would develop industries to be able to pay for it. An example of this, that we will cover later, is farming.

Self sufficient is not self reliant, it just means that we can produce enough of what the world needs to trade for what we would need to buy.

Secondly the project would have to be expandable as we can't know how big to build it in the first place, therefore we will want to begin small and grow. Living on a floating island would be fine but it

is limited in size so we need to develop a system or infrastructure more than a single float.

The third main goal would be to make the system replicatable. We can't put all of the refugees in the world on a single seamount. We would have to have a system that others could duplicate in other parts of the world. Each development would have its own personality such as one might be for Muslims while another for Christians, one for libertarians and another for socialists. One could be developed for some new way of organizing without the need for government. However, as a pilot project Marinea itself would only have the smallest use of government imaginable so it would be easy to use the plan and modify it as required.

The smallest type of government that is not anarchy would be a libertarian one but that doesn't mean that it can't be modified so long as it doesn't limit the ability to use the floor plan for developing other colonies. One such modification might be to use an AI level computer to run the operation of government, judicial system, etc.

The forth main goal is that the settlement has to develop in harmony with nature. Many of the problems that brought us to the need for colonizing the ocean right now is because we have not been taking care of the land very well. We can not hope to prolong mans existence on Earth by destroying his habitat. We will promote the use of separator toilets and recycling everything. We will promote the use of biodegradable plastic substitutes to keep harmful plastics from our oceans.

At the present rate of destruction with plastics, it is estimated that by the year 2050 there will be more plastic in the ocean than fish. Who wants to live like that? So we will be teaching new sesteads how to recycle their waists so that it helps the environment instead of killing it. We will encourage the development and world wide use of those new biodegradable plastic substitutes getting rid of the mess of throw away plastics made from oil. Fish can eat plastic substitutes made from algae because it is made from fish food.

By meeting these four goals, it is hoped that the Marinea Pilot Project would become a template for many future sesteads to develop from and by doing so extends mans stay on this planet, while finding new solutions to his problems.

Part 4: The First Colony



Using the early homesteads as a guide, the members of Marinea asked what would be the necessary elements needed to start an ocean colony. The early homesteads grew up around towns that had a general store, a restaurant/tavern, a hotel and a livery to stable the horses. Marinea would then need a barge or other float that could house a general store with the ability to restock it's shelves, meaning a supply boat, a hotel for new colonist to stay until they decided what they wanted to do for housing, and a restaurant/bar for eating. The general store would handle mail deliveries until a separate post office could be developed.

Instead of a livery, Marinea would of course need a fueling station to supply the boats and other floats with fuel oil, gasoline and propane. A separate fueling tanker barge would suffice nicely for this. Most of the energy requirements could be gotten from solar or water current generators but for transportation, liquid fuels would be a necessity. By coincidence, there is a barge for sale that already has all of those necessities built in. It was a sportsman's club that went out of business. The cost for this 380 ft barge is \$3.5 million dollars. It would need some up dating from its previous business and initial stock of supplies along with a separate utility boat for trips to the shore for supplies and tourist transportation. The total start up cost should be somewhere around \$20M. Once we have 75% of that (15M) we will launch.

Example of a type of barge that could be used as a floating town center for a community at sea.



At first people would live on their own boat or floating home but apartment barges would be developed early on.

Another early development would be some type of wave reducers. Marinea will be a marina with break water walls surrounding it. We position the settlement on an underwater sea mount where the water depths would be around 25 feet. This is a good depth for ocean farms and will also reduce the size of the waves. You can't get big waves without deep waters. Another protection from big waves would be to locate the settlement behind an island that is too small to be inhabited but good as a wave break. We would use the island as a park and stable mount for future cell phone towers also. However, Marinea is intended to be an ocean marina protected from the waves by either floating or stationary walls. It would most likely be a small area at first and more area added as the population grows.



The only real danger to living at sea is the big waves that form in storms and hurricanes. The worst part of hurricanes on land, is the flying debris and flooding. Living on water means there can not be any flying debris other than water, nor any flooding. Flying water can sting but not really hurt anyone. By planning and training, citizens of an ocean colony can live as safe if not safer than a land bound village.

Most of the dangers that we face on land just doesn't happen at sea. For example, there are no dangers of earth quakes, forest fires, avalanches, droughts or insect born illnesses as there are no insects. There are no tornadoes at sea either and every home comes with its own moat for added safety. Speaking of safety, water is what they use to protect against nuclear radiation from getting to the workers at the nuclear power plants, so a seastead may also be the place to go when a war breaks out.

What would bring the first colonist to Marinea though is profits. Fish farms make a nice profit but there is also algae farming. There is so much demand for algae already that the demand outstrips the supply by a factor of hundreds. In addition, algae can be made into fuel oil. All fuel oil was algae to begin with a couple of million years ago but algae oil could also be used as cooking oil. Seaweed and algae makes a really good animal feed and there is more Omega 3 brain food vitamin in algae than in fish. Seaweed also make a wonderful natural fertilizer especially when mixed with fish carcasses.

The current price of corn as of September 16, 2020 is \$3.7175 per bushel or about \$5,000 per acre. The profit expected from an algae/seaweed farm is \$6000 and there are no fertilizer, pesticide or maintenance costs. The early farmers would each be given a 20 acre plot to farm. That should produce around \$100,000 per year, not a bad income.

By combining fish farms with seaweed you will have two cash crops and the fish farms will feed the seaweed while the seaweed cleans the water for the fish to thrive well.

Other business would do well in an ocean village supplying the needs of the sea farmers. Of course some would bring their business with them such as a barber or hairstylist that owns a boat, if desired they could just work from home. Boat mechanics would find the demand plentiful and they wouldn't need much in the way of advertising cost either. There would be a need for apartment developers and restaurateurs. There are no rules other than safety so a pharmacist could open a pharmacy or a doctor could open his own clinic.

After launch, among the first other vehicle types that would be added, would be a submerge-able dry-dock, a used hospital ship and fuel barge. Just about anything that you can do on land would also be welcomed by an ocean colony. There would be some businesses that would not be available such as mining as it would destroy the environment of the other seastealers and probably lawn maintenance as there aren't many of those at sea.

Part 5: Sea Farms

When thinking about living at sea, farming is probably the last thing to come to mind, however the reality is that humans eat more fish than beef. What's more, we eat more farm fish nowadays than we do fresh caught. The only problem with that is it's all too close to the shore line where the water is not recycled sufficiently so bacteria and fish lice tend to grow fast. The farm fish will also infect any wild fish in the area. Fish need an abundant supply of clean water which there is in plenty out at sea but people have not yet decided to live there because it's too far to the store. An ocean community will give the sea farmers a place to live while the open ocean gives the fish a place to live as well.

Big fish eat feeder fish which is usually caught in the wild but a farm could raise feeder fish for the market as well as raw food for the fish farm. Feeder fish eat algae and other sea vegetables so growing algae, seaweed and other such things can be grown for the market, which is sizable but also to feed the feeder stock. Another benefit of raising feeder fish is that they don't take years before they are ready for the market. A fast turn over means that profits can be made early on and contentiously.

Seaweed is not only eatable but nutritious as well. Algae is used to make vitamins. It has more natural vitamins than land based vegetables because over use has depleted the land of its nutrients. Seaweed

is used in sushi as well as many other ethnic dinners. There are over 10,000 types of sea vegetables to choose from, some are better for the table while others are better as a natural livestock feed.

There is one type of seaweed (*Asparagopsis taxiformis*) that when 1 to 2% is added to the cattle's feed, it reduces animal gas (methane) by as much as 99%. It's basically gas-x for cows. This may not sound important at first reading but because methane is 23 times more harmful as a greenhouse gas than CO₂ (carbon dioxide) from car emissions, farm animals are more hazardous to the environment and global warming than all the cars, trucks, planes and trains combined. Reducing their emissions would be like taking almost all of the vehicles off the road. *Asparagopsis taxiformis* red algae (not to be confused with fresh water *dinoflagellates* algae that causes red tides) is grown best in tropical oceans and to a lesser extent in warm water temperate zones. Because of all the farm animals raised world wide, this is a sizable market all by itself, but let's not stop there.

Businesses have already developed a biodegradable plastic substitute made from algae. If it gets thrown into the ocean, not only will it break down to natural ingredients but if fish do eat it, it won't hurt them. In addition to biodegradable plastic, algae as mentioned earlier can be made into fuel. There is enough oil being pumped from the ground that the gas prices aren't very high at this time. That won't always be the case however because there is a finite amount of oil in the Earth. No one knows exactly when or how much there is but someday it will run out. When that happens, we can make our fuel from something that won't hurt the planet. Algae takes in carbon dioxide and gives off oxygen. So whatever emissions come out of a car using algae oil, is recycled to grow new algae making new oil. Algae oil is pure enough that you can even cook with it.

While you're growing algae, it cleans the water and makes it good for fish, so along with the seaweed, you might also raise crustacean type seafood such as conch, mussels and oysters. If the sea floor isn't too far down, you could also raise shrimp, crab and lobsters. In short, a farmer could get 3 different types of products from the same farm area. You can't do that with dirt.

Another type of vegetable farming that would be right at home in the ocean is hydroponics or aquaponics. These two types of vegetable farms don't need dirt but carries the nutrients directly to the vegetable's root via water. When you clean a fish, what do you do with the head and tails? Answer, grind them up and add it to the hydroponics water. There isn't a better or more natural fertilizer available for fruits and vegetables. The American Indian used to bury fish in the fields to raise crops on. It should work even better at sea where it's free.

There is one other type of farming that would be useful at sea and that is raising lamb and beef. Not the animals but a new process where meat is grown in a large special kettle like a brewery. The starter cells are kept at a perfect temperature and fed nutrients to allow the cells to grow. It's the same meat as you would get from a live cow but no animals have to die for us to have beef for dinner. Because of the supply and demand for inhumanely grown meat, cultural beef cost more than a dead animal but you don't have to worry about eating meat from a mad cow either. (Read more here <https://gfi.org/science/the-science-of-cultivated-meat/>)

Land farms cost a lot of money to get into so a lot of the land is owned by large corporations. It's hard for a small farm to make a profit when they have to compete with these large industries. This is not so at sea because we don't need land just the area to grow our products. Going back to nature doesn't mean going broke any more. Almost anyone could quit their land jobs and provide for themselves in a

healthy environment with clean air. It would take a little to get started like a boat some available ocean and around \$35,000 for seeds and starter supplies but that is about it. What a way to retire.

Part 6: Other Businesses

Just because I have taken a few pages to explain why Marinea would be a farm community, it doesn't mean that is all that it is. Quite the contrary, the types of businesses that would be profitable at sea is massive. Lets start with real estate, there is no land but everyone would still need a place to live. Floating apartments or condos would be perfect for a real estate property manager or developer as well as a rental company. Home builders would have a market for those who would prefer their own sea homes. There are a number of types of sea homes already developed but a semi-submersible would give a very stable and comfortably home. It is similar to the floating oil derricks but a lot smaller. Ocean Builders out of Panama is working on a swath style home called a "sea pod", which is the name of the type of semi-submersible that I just described. To see a sea pod, check out Ocean Builders web site at <https://oceanbuilders.com> .

An auto dealership may not work well but a boat dealership would. It would be impractical to maneuver a floating home to the store so instead of cars most people would own a boat for trips to the store or a night on the town. Of course boats and barges would need mechanics and construction repairmen to keep the family vehicles in shape.

And what would a night on the town be without diners, clubs and retail outlets. A racing enthusiast might like to start a jet-ski race on a balmy Sunday afternoon while athletes may prefer training for Olympic level swimming and diving, or scuba diving classes. For a village in the ocean, sports fishing would be a natural. Although ocean living would be different, it wouldn't have to be boring, whatever your interests are on land, you would likely find a suitable counter part at sea.

If a company like Sea-World had enough money to develop a large closed in area, what better place to expand their enterprise than an area where the fish and mammals are in their home environment. Tourism would be a very profitable industry in a beautiful place like a seastead.

Product industry such as algae mills and fish producers will love the fact that they would have the freshest fish to work with but also all the energy that they would need for the price of the generator. Water currents are still free.

Ocean research companies, universities with a marine division and even grade or high schools would be a perfect fit in an ocean village. And the great part is that there are no state governments telling you what you have to teach, you will only have to pander to the demand of your students.

In fact, the limits of what could be done at sea is subject to the limits of your imagination. A small libertarian type of government doesn't require one to have a license to do everything such as big government requires on shore. You are free to do what you want to do, and be what you want to be ... as long as it doesn't impinge on the rights or safety of others.

Part 7: First Developments

The early settlers will have the advantage of developing their businesses without competition and have the choice of housing placements but they will also have it harder than those that come later. It will take a good size settlement to warrant a hospital ship or walk in banking for example but these things have not gone unnoticed or unplanned for. It is just that we need money to do anything and there is money available but we have to show that there is a market for the thing that we need the money for. No market, no return on investment, no finances. So big ticket concerns may need to wait until the population size can support it.

It is true that if we have a hospital ship more doctors would come aboard with us and with more medical abilities available, the more cautious settlers will come to the floating village. However, a front line military unit, which would need a doctor the most, doesn't have a doctor with them. A lot of medical needs can be handled over the internet as was proven during the 2020 pandemic. A paramedic could handle a lot of the problems that we are likely to face and a visiting doctor could be brought on to handle anything that would be needed in the interim.

Remember that the Marinea Pilot Project is intended to be only a hundred miles from Miami Florida, and a seaplane can make that trip in a half an hour, about as long as it takes to get to the hospital by ambulance from most rural homesteads. A seaplane cost less and does more than a hospital ship would so there are steps that we can take to do more at a lesser cost than putting a lot of money upfront. A seaplane would also allow weekend tourist to come and check out the seastead. Their tickets would help pay for the seaplanes making the cost of adding one a lot less than the cost of a single use hospital ship.

One of the things that we would need to add early on however is a break wall to protect against waves. This break-wall can do double duty though and give boats a place to hook to. These break-walls, will pay for themselves through mooring fees. Boaters already pay mooring fees for their boats in land marinas and our fees should be a lot less than land bound marinas charge. Boaters win by paying less and the village wins by being safer and calmer than it would be other wise.

There are somethings that we will need to be a thriving seastead, such as a boat maintenance facility. One way to do this is to buy a used submersible dry-dock ship. These ships have an opening front gate and will sink down into the water to allow ships and boats to float into it. When they pump their tanks both ship and floating cargo climbs above the sea level allowing the boat mechanics a dry area to work on the boats. The benefit of this type of dry-dock is to allow the shipyard to go to the boat instead of bringing the boat to the shipyard. However there is another somewhat less costly way to build a shipyard.

Remember that Marinea will be located on a seamount so the seafloor is just a couple of feet below the ocean surface. For this we could use barges with a crane on it or build cement columns right on the seafloor and a platform on top of them with a crane on the platform. The crane, or lift, would pull the boats out of the water and position them on a cradle sitting on the platform to work on. This type of shipyard is a very stable structure and can be built as large as we like. The only problem building directly on a seafloor is that it is susceptible to earthquake damage as any land based building is. Of course, if your building falls on land, you will most likely die, where if your building falls at sea, you will most likely get wet.

There are somethings that we will need that is just beyond our capability such as banking. For this, a bank will come to Marinea when there is a significant need for one. In other words, when there is a significant market. Almost all banks sell silver and gold. Instead of being tied to any one currency, we will use silver as our base. We intend to start a crypto-currency like bitcoin called sea notes (C#) based on silver and tied to the silver market. Just like land based banks, there will be a small surcharge to convert your C# to actual silver but C#s are intended to be convertible as the US dollar once was. One C# will have the value of the current sell price of one ounce of silver - making it easier to hold without becoming a target for theft.

These first developments would naturally come after the initial launch of the pilot project. Most of these developments will be financed by the company that wishes to spread out into a new market. This means that any projected time element would be purely speculative. It all depends on getting our project's existence out to the general public and the value that those businesses place on the new world market.

The first step is to get the business barge / town center, and get it fully stocked and out on site.

The second step is to build a marina with breaker walls and mooring facilities.

Step three is to open it up to other businesses and set up our working arrangement with them.

And the fourth step of phase 1 is to grow. Once we reach a population of 2000 members, we will declare our self to be a village and a city after we reach 5000 onsite members. This leads to our next part, governments.

Part 8: Governments

Just about any land mass and much of the ocean has already been claimed by one government or another so finding a seamount to begin our project, as many have already found, is problematic at best. So how can we be so certain the we can find any place to call home and free of government intervention? The answer is we make them an offer that they can't refuse ... we will make them money.

The seamount where we are interested in establishing our pilot project is known as the Sal Bank. It is located 100 miles south of Miami Florida and about 50 miles north of the island of Cuba. The Sal is claimed by the Bahamian government. The Bahamas are an island nation over in the Atlantic that has no real interest in the area of the Sal Bank. They are located on another seamount with islands large enough to support a population, where the couple of islands in the Sal area are too small to even put a house on.

The Bahamas have one serious problem, all of their islands are shrinking as the ocean level gets higher, and the ocean level is getting higher. They have no income from the Sal bank and because it is so far away from their Bahama bank areas, there is no easy way to police their territory.

What we offer them to give us self determining territory rights is first a demonstration of how to move from a land based country to a floating based one. Secondly, a way and the man power to police the Sal, and third, we give them a monetary gain by doing so.

Membership to belong to the community of Marinea will have a yearly fee. There are no taxes in the village, not personal and not business. But to be considered citizens of the Bahamian territory of Marinea one would buy a Marinea passport. Prices are changing so I can't give an actual price right now but for arguments sake lets say it is \$300 US. One third of that would go to the Bahama main land and two thirds go to Marinea to improve on the project like building floating wave breakers. A citizen is a current passport holder and only current passport holders may vote in the project's elections.

Businesses are asked to sponsor the community by giving the village 3% of its Marinea based holdings or stocks. If the business has interests outside Marinea, only the portion that resides in Marinea is considered for that 3%. One percent will get passed on to the Bahamian government and the other two percent will be held by Marinea. This makes Marinea a silent partner but because of this, it is to the projects benefit to help your business flourish. To do this, we will maintain an on line registry for all of our partner businesses and a kind of Better Business relationship. If there gets to be a lot of complaints about a member company, as a share holder, we will get with management to see how we can help them to become more consumer friendly. This will benefit the business as well as the customers. And for businesses that get few complaints, they will be put into a recommended status. In addition the registry will list the type of business that you are in and a line or two of what the owner wants to tell their perspective customer about their business, call it advertising.

It is our belief that the government should do something for its income and not just steal it through taxes. Farms are small businesses but probably won't need much in the way of advertising unless your market is the Marinea population. However, small farms can be part of the Marinea co-op so they can reach buyers outside of Marinea and get a fair price for their crops. Co-ops can compete favorably with large corporate competition.

Hydroponic vegetable farms would benefit from both local advertising and co-op members as would seafood farms that want to sell to local restaurants and grocery stores as well as directly to the homes. Members can use the "what's happening" section of the website to announce specials and events as well as local news.

Marinea will act more as a non-profit business organization than a government. As profits are made from the various endeavors, after the workers are paid, the remainder will be used to enrich the village as a whole. If no improvements are needed, the profits will be used to buy silver to back up the C#s (Sea-notes).

The governments function is to protect the rights of the individual members and to develop associations with other governments, especially the Bahamas who would have helped give us a start. Marinea was always intended to be a pilot project and to that end will help other seasteads get started. However, to protect the rights of the Marinea settlers, we would only ask the other new settlements to repay Marinea via a portion of its profits. If we use the profits from Marinea's people then they have a right to expect a return on their investments. If funds are available, Marinea may also choose to invest in one of its member's business beyond its initial holdings in exchange for a greater percentage of the business's stocks.

With the advent of the computer, members may vote on any decision the Government of Marinea has to make. Since computers can tally the entire vote in seconds, there is no need for representatives or an electoral collage. Only current passport holder members may vote for any question before the

board or employees, including president of the community. The president will act as judge/arbitrator of any disputes. All government employees terms are for 1 year but it is self renewing unless challenged by the membership then a new election will decide who is to replace the previous employee. Only the president's employment will be for a 5 year period unless recalled by the members for cause.

If the president dies, abdicates their position or is recalled for cause, the first assistant will take over until an election can be called and a new president takes over. The first assistant will also take over temporarily in case of illness or the absents of the duly elected president for vacations or other reasons. Turning a business or government over to a new untried person as is done in the US is just, not our way. The president serves 5 years as first assistant before taking over as president, sort of on the job training. The government will be libertarian in style so most everything is acceptable but may be regulated to adult only areas.

Part 9: The benefits of Marinea

Marinea is a combination of marine and marina, because it is to be a marina at sea. Living at sea means clean fresh air year round. Without nearby polluters, our algae and other plants clean the air increasing the oxygen supply. The modest increase in oxygen makes you feel better and you live healthier as well. Another health benefit is that in an ocean village, swimming is as normal as walking, not only will you feel better but will look buff on top of it.

Of course the reason that this project is so important right now is because there are homeless and refugees on every boarder, all looking for a home. But more immediately, they need food and hope. On the boarder they are dependent on food hand outs, praying that they don't stop. Humiliated but desperate. But if they could be taken to an ocean village, all they would need is a fishing-pole to have as much good food as they need. Of course there is always a need for labors on any farm or ranch so they would also be relocated to a place where they can make a living.

Of course as mentioned, developing algae farms not only produce a much needed product for the world markets but in doing so removes carbon from the air. The refugees that are a burden right now would be working to clean the atmosphere of greenhouse gasses that cause global warming. And although nothing exists at the moment, there is talk that the governments would begin to charge polluters and pay companies that reduce the atmospheric carbon. Therefore there may be an additional profit centers for algae farms.

The other type of natural farm is fish and sea food farms. While making a reasonable profit, our farmers will be helping to feed a very hungry world.

One of the biggest hidden benefits is freedom. What price can be placed on that. With a limited libertarian government, your body, mind and soul are yours alone and no one, has a right to tell you what you should or can do with it. If you want to cut hair, no - you don't need a barbers license. If you want to be a prostitute, be also respectful of all those who find that type of work offensive. Personal liberties are never questioned. You can be gay or what ever the term is these days. You can be a polygamist or practice polyamory, you can even marry your sister, who cares. Marriages are

considered contracts between two or more adults (age 20+). Your freedoms are not to be questioned. Your freedoms end however, where the next person's begin.

A different type of benefit that the Marinea Project offers is the fact that since we are using existing equipment, there is no time lag to build or develop and the price tag is considerably smaller as well.

Part 10: The Marinea Project

The first 8 years have been heavy on research. The reasons for each individual's participation is as numerous as the participants themselves. However all the participants in the design of the Marinea Project agreed on the main reasons, which we included in this booklet. That main cause is to help humanity deal with its growth, provide space and sustenance for the growing population, and to protect and assist nature in the process. We all wanted a place where real freedom is honored and a safe place to raise our families.

As shown here, we have developed a workable solution to the population problem and many of its side effects like climate change and poverty. A solution that is rational and feasible, that can expand as needed, and can be duplicated to other parts of the globe. In doing so, we have developed this solution so that it aids the health of the planet and not just using up its natural resources.

We have given a way for newer governmental strategies to be tried and tested and a new home for any that is not happy with their current one. In this way it is hoped and believed that we can reduce the violence and rioting in the streets. We can give hope to the hopeless and provide a new source of food for the hungry. By developing Earth's oceans for colonization, we can give mankind the time it needs to expand into space.

It is agreed that there are dangers, especially in the beginning - but just as the wild west was tamed so will this new frontier. There will be obstacles but not insurmountable ones. We may not have all the answers as of yet because we don't know all the questions yet. However, if we do nothing we do know the results of that and those results are not pretty.

We don't need to know everything before we start. Think about this, a driver can drive hundreds of miles in the dark by seeing only the 500 feet in front of him. Where we are right now is in the beginning. We may not know the end but we do know how to start.

We now know what to do and how to do it. What we now need is a partner that has the means to make it happen. Millionaires help many causes that don't effect them directly. Oprah has given millions to start schools for young women in Africa. It would be sad if Oprah had not done so much to help others, but 'her' well being would not have been effected if she had not done it. However, the population growth and the other symptoms or derived problems like climate change, effects everyone to some degree. We firmly believe that the wealthy would want to help us give humanity a chance to fix itself just as much as anyone would.

What we need to launch the first ocean village is \$15 million dollars, 75% of our target \$20M. You may not have that kind of money, we don't either; but someone that you know knows someone that does have that wherewithal. If you want to help us find a way to help millions of people that in all

likelihood will never be able to even tell you thanks, help us find that special benefactor by asking others to read this and pass it on. If you can take an ad out in a news paper or TV then you can reach a lot of perspective philanthropists who may want to partner with us. If not, just ask your friends to check us out and see if they would like to join us.

All we need is for everyone to do what they do every day by nature, talk about what is going on, the problems that we face, and how we can fix it. If we can get everyone to refocus on this solution for just a little while, we can end wars and riots, feed the hungry, give hope to those without any, and maybe even save the planet from climate change.

Now of course we can't do all of that with only \$20 million but we won't have to because the inertia will do the rest. It's like pushing a car to a point on the hill top where gravity will take over, then all we will need to do is steer. That is where we are at right now, we need everyone to just help give us a push then the system will do the rest.

Marinea is intended to be a new type of farming community. Simple in nature, using a well established business model with years of careful planning makes the on going operations of the project very probable by using self generated income.

Everyone can help. Do you know someone that can become the benefactor and sponsor of the Marinea Project? Please ask them to check Marinea out, it really is that important to humanity and to the world.

Now that is the fast track, however, there is another method to help get funding. Philanthropist want to put their funds where they will have the highest probability of success. If project members are putting in a portion, philanthropists would have to contribute less and the members are speaking loudly that they support this effort in more than just talk.

The founders program (that we have not started yet) is to ask all supporters to become a founding member of the Marinea Project. To reach people we need a voice. There are podcasters all over the internet, looking for a way to make money, a sponsor. Marinea would develop a founders keepsake coin like those that are given for merit recognition. The price of the coin would be split between the project to pay for the manufacturing and shipping of the coins, and the podcaster who tells his listeners about the Marinea project. This is just to pay for the marketing, not to start the project.

After we get a strong following, it will be time to start our own digital currency, Sea Notes (C#). The C# are tied to the price of silver but not backed by silver. It will be backed by the profitability of the project. If silver becomes scarce we can sell as much or as little C#s as needed without effecting the silver market.

The C# will be used as the main currency in Marinea so the demand should remain strong so long as there is a Village at Sea project. Profits from the sale of C#s will be used to launch the project. A wealthy person could sponsor the project by just purchasing C# to be used in Marinea or traded to new members in the future. Of course, if the price of silver increases, so will the value of C# and the trade in value.

The one thing that we need to get everything started is a new project promoter. The plan is laid out but I can no longer coordinate it. I need a replacement for me. There is no fixing age. Once I find someone that has a voice and can manage the project, I will turn it over to him or her and retire. The

world needs this project, not me.

Questions & Answers

We have tried to show a reasonable and logical solution to a problem that is already causing concerns world wide. We have tried to answer as many anticipated questions as we could while still keeping this from becoming a book. We have tried to show the seriousness of the problem without becoming over dramatic - but in doing so, we may have missed some of your concerns.

So - If there something that we missed, or something that we were not clear about in this booklet-submit your questions, and we will address those concerns on this page periodically. Please feel free to ask your questions, you never know when others may also want to know those answers as well. That additional information may be just what is needed to reach the right person or corporation, and help them to decide if they would like to become our benefactor and partner. Thanks again.

Send your questions and concerns to: bob@marinea.org