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AGRO-FORESTRY & INDUSTRIAL DEVELOPMENT PLAN

INTRODUCTION

It is difficult for the mind to grasp the extent of the rape, pillage and plunder of the smaller nations of Southeast Asia. As an example, nearly one third of the jungle, forest, and timberland of the Philippines has been denuded: 8 million of its 30 million hectares stripped bare and the fragile topsoil left for the monsoons and typhoons to wash away, destroying the life in the streams and rivers on its way to silting and ruining the bays and ports. With no vegetation to protect them, the hillsides come crashing down in mammoth landslides, killing hundreds of people every year.

It is quite easy to say that the answer to these problems and others such as increasing carbon dioxide and depleting oxygen lies in reforestation. It is quite another matter to accomplish any significant amount of reforestation. Many of those elegant Narra and Philippine Mahogany trees took hundreds of years to grow and they cannot be replaced, even in a century. Faster-growing species, such as Eucalyptus and Paulownia, are mature enough to harvest in 12 years but even that is a long time to wait for a return on an investment, especially since those trees must be irrigated at times and washouts repaired at other times so the expense doesn't stop with the planting.

Ruben G. Camurungan, Ph.D. (Doc), an agronomist extraordinaire with years of experience in the sugar business leading to extensive knowledge of the manufacture and uses of the several types of alcohol, has envisioned and worked out all of the myriad details of what appears to us to be the "break-through" worldwide solution to this worldwide problem. Ethyl alcohol (ethanol, sometimes called denatured alcohol) is the same component that furnishes the hangover (and the preliminary euphoria) in whiskey, beer, wine, vodka, etc. It is also used in "Bunsen burners" in school laboratories that burn with such a beautiful blue and smokeless flame. Mixed with gasoline, ethanol increases octane, is much cleaner-burning, is non toxic, water soluble, and also quickly biodegradable. Most modern cars and trucks are factory-equipped with "flexible fuel" systems designed to burn up to 85% ethanol. Currently, in the state of Iowa, USA, 72% of all the fuel sold contained ethanol. The market is enormous.

Dr. Camurungan, President of ARCAM Holdings and Development Corporation, describes his system: "Plant fast growing trees, (e.g., Eucalyptus, Paulownia, etc.) for the production of raw materials for integrated wood industries; in between rows of trees, plant agricultural crops, preferably sugarcane, sorghum, cassava, corn, and/or sweet potato as raw material

for alcohol production, for animal feeds production, or for other downstream industries, while waiting for the trees to mature. Agro-Forestry Farm size may vary from 5,000 hectares at the lowland areas to 60,000 hectares combination of foothill and upland areas."

Probably the most important feature of the agri-program is its economic feasibility. While it takes some two years to clear, level, pre-condition the soil, install the irrigation system, and plant trees and the agri-crop, before the end of the two years there should be harvestable agri-crop available to sell or process to alcohol. By the end of the third year the agri-crop is projected to support the entire project and begin to pay back the investment with a projected rate of return of some 32%. At current margins of profit for the alcohol, the agro portion of the project can pay for itself in 5-6 years.

Said another way (for "investors"): Who would not jump at the opportunity to invest in a project that will pay for itself in 5-6 years and yield a return of some 30% per year thereafter? On top of that, after twelve years the rate of return is nearly 100% per year.

Again quoting Dr. Camurungan: "Sources of revenues are: (1) Sales from Salvaged Logs; (2) Sales from Alcohol; (3) Sales from Animal Feeds; (4) Sales from thinned-out Logs starting on the 7th year and thereafter; and, (5) Sales from commercial logs harvested starting on the 12th year and thereafter. It takes 12 years for the Eucalyptus trees to mature, from planting time to harvest. The project shall have paid for itself even before commercial harvesting of the trees starts. On the 12th year and thereafter, when commercial tree harvesting starts, annual gross income from operations amounts to almost the total value of investments."

THE PROCEDURE

While the procedure is not too difficult to comprehend, the magnitude of the project(s) and the benefits thereof may be a bit mind-boggling. For the first project in an area, a ravaged area of sufficient size (at least 24,000 hectares (59,300 acres)) that has an existing or potential water and power supply should be selected. (Adequate electricity must be available to build a small city or the agri-portion of the project will run too far ahead because it may take 2-4 years to build the required multipurpose hydroelectric/ irrigation facility.)

Dr. Camurungan: "A Community Center and an Industrial Complex will be established in every project site, employing rural and urban population. Each Community Center will be complete with basic infrastructure. Livelihood and social concerns are addressed. ..." (Let us point out that if 5 workers are required per hectare at least 120,000 workers are required just for the agri-portion of the project. Putting that together with all of the people required to run a city to support that many workers, plus the distillery and "Industrial Complex" and we see a city of some 800,000-1,200,000 people. And let us remind the reader that we are describing one project of 24,000 hectares.)

"Tree Farm Development: On a 24,000-hectare Agro-Forestry Farm module, for example, 2000 hectares are developed and planted every year with Eucalyptus trees. In between rows of trees, Cassava / Sweet Potato / Corn are planted, harvested every year and processed into alcohol and/or animal feeds.

"Tree Harvesting: On the 12th year, and every year thereafter, 2000 hectares of Paulownia or Eucalyptus trees are harvested and planted anew. In this manner, at any point in time, 2000 hectares are being harvested while 22,000 hectares of trees remain standing, at progressing stages of maturity. Thus, the commercial tree farm is always green all year round, an undertaking that would guarantee the establishment of a sustainable forestry program."

In most poverty-stricken countries there are only a few areas of denudation close by sources of power and water so a very critical part of this program will be the construction of multipurpose hydroelectric/irrigation dams with their accompanying distribution systems. In some places irrigation may not be necessary but to lose one or more years' plantings and saplings to drought would prove very expensive and would also interrupt the "rolling" harvest schedule. Obviously, it becomes necessary to select one or more areas that are immediately viable to begin the program while dams and generation facilities are planned and built in other places to serve the new little cities that will can be well-planned and beautifully built.

At this point we must observe that arable land should never be used for homes and the buildings of cities. In the US states of California and Florida homes and cities have been allowed to crowd out the produce and citrus-growing acreage so that they are becoming net importers of food. It is best to build the cities on hilly or rocky ground that will support only ornamental shrubs and trees, thus preserving arable land for food production.

After a site is selected, ownership of the land must be gained (or joint ventures established) and the proper permits obtained from the myriad agencies that will be involved. Once the paperwork is all in place a "tent city" can be put up to house the people who will operate the equipment to begin clearing the land so that the city and reforestation area can be started.

COMPONENTS OF A TYPICAL COMPLETE FACILITY

While recognizing that all denuded or logged-over areas are not precisely 24,000 hectares in size (that is an area approximately 10 miles by 10 miles, 16 kilometers by 16 kilometers), we will continue to describe that as a "model" example. We must admit that, for professional city planners and architects, to be able to plan a beautiful city for well over 1 million people, "from the ground up", will be a pure joy. Actually, they will start from 6-8 meters (20 feet) below ground to dig the drainage and service (communications, water, electricity, natural gas (or hydrogen), and sewage disposal) systems in a labyrinth of interconnected concrete tunnels beneath every street and thoroughfare. This is more expensive in the beginning but will pay for itself many times over in avoided maintenance

costs and the beauty of the city is enhanced because there are no overhead wires or utility poles.

In the city the streets can be very wide so that buses have their own lanes. Overhead covered walkways with moving sections and escalators up and down in heavily traveled areas can be provided between offices and shopping malls. Shops can all be contained within the malls so as to eliminate the vendor clutter on the open, tree-lined streets and sidewalks. Parking structures with ground-floor auto sales and maintenance facilities can be spaced around the perimeter of the malls.

We have estimated that each 24,000-hectare project will require as many as one million people. Here is how we arrive at that very conservative conclusion:

A hectare is equal to 2.5 acres and the estimated number of workers required to attend the reforested area with its intercrop of corn, sugar cane, and various root crops is 5 per hectare, or 2 per acre. 24,000 multiplied by 5 is 120,000. To man the Industrial Complex will require an additional 2,000 so we have a base employment of 122,000.

The average number of children per Filipino family is five. Five times 122,000 is 610,000 so we have to have 15,250 teachers (at 40 students per teacher), 12,000 policemen, 12,000 firemen, etc., all of whom have children, requiring more teachers, etc.

If the number of shopping malls to serve one million people is two, when we add the sales clerks, executives and supervisors, all of the health services people, municipal employees and service/repairmen, we reach a number of 85,000 support workers, adding up to 207,000 total employees. After a very large page of computer calculations we arrive at a total population of 1,119,600. If our margin of error is no worse than 10% the figure of 1 million should be acceptable.

INVESTMENT REQUIRED

As in most endeavors, labor is the major cost. In this project, wherein we can expect no serious income for at least two years while the labor cost is at or near its maximum, it is the most difficult hurdle to overcome. Furthermore, if we are to demonstrate a corruptionless society wherein there is no need for corruption, we will want to pay those 207,000 employees adequately. While we have no reliable benchmark to use, the Sagip Pinoy program of Jose B. Comendador uses the amount of \$652 per month as his target, and based upon our knowledge of the huge amount of research he has done, we believe that in a rural setting where most of the transportation is furnished, the average family can be comfortable with \$20 per day, at least in the two "start-up years".

Twenty dollars times 207,000 is \$4,140,000 per day, a two-year total just over \$3 billion. The pre-planned underground infrastructure, streets, street lighting and sidewalks are estimated at \$10,000 per home, about \$2 billion. At \$24,000 per good quality 3-bedroom home, 207,000 homes cost about \$5 billion. Estimating 6,000 students per school, approximately 100 schools are needed and, at \$10M each, comes to \$1B. Four hospitals

could cost about \$40M, and 2 Malls at \$200M each are \$400M. Last, but not least, Municipal buildings and equipment, fire and police buildings and equipment should cost about \$200M. The grand total is approximately \$12 billion--an investment of \$12,000 per person. The cost? To whom? To the "government"? If the Global Alliance Program is used, it doesn't cost the government anything. More on this later: in Sovereign Economics.

PRODUCTS AND MARKETING

The primary products will be ethanol, wood products and veneer, pulp for paper, lumber, and animal feed. Secondary products will be electricity, hot, drying air generated by waste and scrap-fired steam-powered co-generators, effluent distilled water to be filtered and bottled, and carbon dioxide (dry ice).

The profitability of ethanol production has recently been increased by several multiples by the doubling of the price of crude oil, with which it must compete as a source of fuel. When crude oil is costing some \$20/bbl, refined gasoline is priced at approximately \$0.20/Liter (at the refinery). Now that crude oil is above \$40/bbl, at the refinery gasoline is at least \$0.38/Li. Ethanol can be produced for \$0.16/Li (using cassava feedstock) to \$0.26/Li (using sugar cane feedstock), and the cost is not nearly so vulnerable to international manipulation as is the cost of crude oil.

Ethyl alcohol has many uses besides being a preferred substitute for gasoline, but the demand for the huge volumes as fuel is what suddenly propels it to the position of being the centerpiece of a technology that can alleviate poverty all around the tropical girth of the world (as well as wherever corn, sugar beets, potatoes and sweet potatoes thrive). The advantage of the tropics is that many crops can be grown and harvested twice in one year.

There is, of course, more to the project than just producing the alcohol; it must be mixed with gasoline or diesel and distributed to service stations where it can be sold. Dr. Camurungan has an arrangement with GMT Trading, Inc. who will take the alcohol to its refinery (where it will be refining crude oil into gasoline and other derivative products) where it can be mixed with gasoline and/or diesel and then distributed to its network of service stations.

Since 1999 the major auto makers in the US and Europe, and Nissan in Japan, have been manufacturing all of their engines to use a mix of 15% gasoline and 85% ethanol. This modification has been named "flexible fuel" and includes a sensor that determines the percentage of ethanol coming from the fuel tank and adjusts the fuel/air mix to match the cleanest burning mix to the throttle setting. Other makes and older cars can use a mix of 90% gasoline and 10% ethanol so, at least in the early period of distribution, the latter mix will be available. Ethanol is corrosive and requires stainless steel storage and vehicle fuel tanks as well as Teflon-coated hoses and fuel lines so modifications must be made to service stations before the much lower-priced "E85" is widely available, although a few better-financed operators might want to get a head start by making the modifications to dispense E85 from a special pump.

POWER AND WATER

There are probably a few areas in most countries where there is sufficient electricity and irrigation water to support at least one "unit" of the AGRO-FORESTRY & INDUSTRIAL DEVELOPMENT PLAN. In the Philippines there are no doubt several but there are many more denuded and logged-over areas that have virtually no electricity and/or no irrigation water. These areas will require the installation of a large dam to impound the water and a hydro-electric generating system to extract the energy from the water as it is released into the irrigation system.

POWER & SYNERGY, INC. is a 10-year-old company that is led by engineers with several decades of experience in power generation of virtually all kinds. It is currently working with Dr. Camurungan to locate and evaluate sites for the Agri-Forestry projects, the most immediate in the province of Nueva Ecija near the city of Cabanatuan in the Central Luzon Valley. The dam and hydro-electric generator would be located in the Sierra Madre Mountains on the eastern side of the valley, an area much abused by illegal logging. The dam will impound enough water to irrigate some 100,000 hectares (the equivalent of 4 Agro-Forestry projects) and will generate some 100 megawatts of electricity, an ample amount for the projects with some left for export to the surrounding area through the national grid. This system is projected to cost some \$200 million for the dam and generator plus \$100M for the electricity and water distribution systems.

SOVEREIGN ECONOMICS

The current selling price for gasoline is \$0.55 per liter--or \$2.08 per gallon. (It requires 3.78 liters to make 1 gallon.) Each hectare will produce an average of 5000 liters (per crop)--or 1320 gallons--at a current maximum price of \$0.45/Li--\$1.66/gal., for a total of some \$2,200, and that times 24,000 hectares gives us ethanol maximum gross income of some \$50 million per crop. Two crops would earn \$100M per year. There are other products to be sold and in the 12th year when the first timber crop is harvested the gross income should more than double to over \$200M, making the Agro-Forestry-Industrial portion of the project very profitable.

But the "City" portion is quite a different problem. The interest alone on \$12B at a very low 2% is \$240M per year so from a purely traditional banker's economic analysis, taking the entire project as one whole, it could not be funded because the income is insufficient.

However, with the aid of the DON ESTEBAN BENITEZ TALLANO & DON GREGORIO MADRIGAL ACOP FOUNDATION, INC. (FDN), and the GLOBAL ALLIANCE INVESTMENT ASSOCIATION (GAIA), it can be funded quite easily and can serve as an example of Sovereign (Gold Based) Economics.

The FDN is the steward of 50% of the estate that was created by King Luisong long before the Spanish first came to these islands. Some 617,500 metric tons of gold were leased by the Philippine government in 1949 from its owners, Tallano and Acop, most of which

should still be in the vault of the Central Bank in Quezon City. The Original Certificate of Title (OCT No. T-01-4) was last acknowledged in the Pasay City Court (RTC 111) of Judge Ernesto A. Reyes in October of 2001. The title means that most of the land that has not yet been transferred to beneficiaries of the Agrarian Reform Act, or is in some other way subject to legitimate public or private ownership, is under the stewardship of the FDN with the mandate to distribute it to the poor farmers. What better way could be imagined than what has been described above?

GAIA is the holder of a very large debt of the US Treasury and its DEEDs OF ASSIGNMENT FOR CONSIDERATION (DEEDs) are designed to be used as RESERVES in all of the banking systems in the world, just as is any other US Treasury debt.

The matter of SOVEREIGNTY arises when a nation's banking system is considering the use of the DEEDs. Most bankers are accustomed to getting their education and directions from the IMF or World Bank personnel and seldom act as though they live and work in a sovereign nation that can decide upon what it will base its money. As soon as this, or any other, nation decides to use the GAIA DEEDs as banking reserves they may do so. No one will object--mainly because no one has any right to object because it is a matter of SOVEREIGNTY.

To return now to the funding of the project. GAIA is interested in transforming some of its "paper" debt from the US Treasury into gold so that its assets will not decline if the US dollar declines in value as compared with gold. GAIA is willing to give 50% of its asset to entities (nations, local governments, NGOs, etc.) for their assistance through the use of a Joint Venture Partnership with the entity: GAIA puts up the RESERVES which the JVP presents to its domestic commercial bank which uses those RESERVES to issue its own payment for gold which it then uses as the final RESERVES upon which to base lines of credit to the Project Proponent and GAIA.

To give that "life", we can illustrate how the FDN and GAIA would help fund this project and perhaps hundreds more like it. Before we do so, however, we will mention that the program has "stabilizers" and "safety nets" built in so that it will operate effectively in virtually all economic environments and conditions. To save space and the readers' time we will not print the several pages required to describe those here.

Having calculated that the Agro-Forestry project will require the equivalent of some \$12B for the arbitrary "unit" of 24,000 hectares producing an average of 240,000,000 liters of ethanol (at two crops per year), we could use that formula to estimate the funds required for projects of different sizes. The following illustration will apply to one unit.

To stabilize and protect the transaction from external interference, GAIA will arrange to purchase 2,500 metric tons of gold (the amount calculated to fund a project requiring \$12B) from the FDN at a premium price of \$500/oz. At the same time GAIA will form a Joint Venture Partnership with the National Treasury (thus creating a new and separate

entity) to effect the purchase of the gold at the current LMER (London Metals Exchange Rate) so that the National Treasury cannot be criticized for overpaying.

Two GAIA DEEDs are required, one for \$40B to purchase the gold from the FDN, and the other for \$33B to be used by the JVP to purchase the gold from GAIA, making the total collateral "at risk" \$73B.

To clarify, all banking is based upon RESERVES and the GAIA DEEDs are designed to serve as banking RESERVES, the same as any other US Treasury debt. Banks, Central Banks, and National Treasuries all hold and maintain RESERVES and are expected to issue new credit, or in the case of a Central Bank or National Treasury, new currency and/or credit commensurate with those RESERVES. This results in an increase in the "money supply". When a nation allows an increase in its money supply without a concomitant increase in its legitimate RESERVES, the value of its currency unit will decline. This is called "inflation" because there is no legitimate "backing" for the new money issued. Conversely, if the new money issued is used to buy gold to be placed in its RESERVES the QUALITY of its RESERVES will be enhanced and the value of its currency unit will be increased.

In this case, the GAIA DEEDs are used as RESERVES for a short time so that new money/credit can be issued to purchase the gold from GAIA that GAIA has purchased from the FDN.

GAIA then pays the FDN the first tranche of \$30B (the current LMER less a reserve of 10% to cover interim expenses). When the gold (or title thereto) is delivered to the JVP it is divided into two equal parts; one part is assigned to the National Treasury and the other to GAIA. When the price of gold reaches a "target price" of \$500/oz, GAIA can then sell enough to pay the 2nd tranche (which includes the 10% reserve) to the FDN, bringing the total received by the FDN to \$500/oz.

The court's mandate to the Administrator in 1976 was to establish a Foundation to administer 50% of the assets "in the interest of the Philippine farmers, poor families and their children either Christian or Muslim especially those who become victims of martial law, and to uplift, economic, social and health condition of those families living under poverty line by providing employment with the use of the proceeds of the sale of the estate which the administrator is authorized to do so." The above-described transaction places \$30 billion in the hands of the FDN with which it could very easily establish a Joint Venture with ARCAM Holdings and Development Corporation, furnishing not only the land but also the funds with which to build the city and do the project while carrying out its mandate to near perfection.

BENEFITS

Some of the benefits of such projects are obvious; some are not. Employment and living conditions will be vastly improved for some 1 million people per "unit". Unproductive

land, and some that is endangering other land and people, will have been returned to active, high-value production, never to be "lost" again. The erosion of precious topsoil that kills fish and silts up harbors and bays will have been arrested; soon the streams and rivers will again be clear and filled with fish and other beneficial aquatic life. Forested areas, such as these will become, feed moisture back to the atmosphere, helping to enhance and maintain a better balance of rainfall. Growing plants take carbon dioxide from the air and give off oxygen; these projects have the potential, if there are enough of them world wide, to reverse the depletion of oxygen in the air we breathe while decreasing the so-called "greenhouse effect" of an overabundance of carbon dioxide.

This beneficial effect is compounded by the use of the ethanol, especially E85, in the millions of internal combustion engines. The following is a quote from the website of the State of Minnesota.

"Ethanol is good for our environment"

"Ethanol is one of the best tools we have to fight air pollution from vehicles. Ethanol is an oxygenate, which simply means that it contains oxygen (about 35%). Adding oxygen to fuel results in more complete fuel combustion, thus reducing harmful tailpipe emissions."

"Ethanol also displaces the use of toxic gasoline components such as benzene and MTBE, both known carcinogens. Unlike petroleum-based fuels, ethanol is non-toxic, water soluble and quickly biodegradable."

Nationally, while somewhat hidden, the financial benefits of even one unit are very significant. The money supply in the Philippines is reported by the BSP as P1.5 trillion, or \$28 billion. The issuing of \$30B to purchase the gold will double the money supply because the FDN will not take any of it offshore. The mandate is to invest it for the benefit of the PEOPLE. The National Treasury will gain some \$15B worth of gold, thus doubling its foreign exchange reserves, all without borrowing one centavo from anyone.

Upon funding the second unit the Republic of the Philippines will be in a position to declare its currency gold based, i.e., directly acceptable virtually anywhere with no further need of "foreign exchange". Soon after that it can stop taxing its own people--no more "vat" or personal income tax. It can also rearrange its tariffs and duties to protect its own agriculture and industries and pay (or repudiate) its external debt.

This program can be used in any nationalistic people-friendly nation. Many nations have already received shipments of gold from the Philippines and there is plenty of gold in the Philippines to supply those that have not. This is not a fairy tale; this is the reality that has been hidden from the "former colonies" for more than a century and this is the truth that will set them free.