

Coming up Business Chance, Promotion of Jatropha with Biofuel

- a proposal of new business model connecting advanced countries with developing countries -

Hiroya Yoshikawa

**Big way project adopt an importation encouraging development system, and we plant Jatropha in the land of about 30,000 ha in Indonesia, and import it to Japan as biodiesel fuel. Quantity, price, and stable supply were enabled by large-scale expansion, and we suggest a business model to relate a developing country and a developed nation to finance of financial engineering.**



The land, which plants Jatropha, Big Way Project, Sulawesi Island, Indonesia

<Action Research, Biofuel 100% (B100)>

I have not made a specialty in the field of oil and fats industry, company and the industry like the reader of our journal (OLEO CHEMICAL). I specialize in community development and the environmental management plan (assessment) specially from the beginning. Currently, I am the expert on the promotion plan of Okinawa, and the economical exchange with Okinawa and Southeast Asia.

I have challenged the coordination, which connects actual business with theory. I call this kind of research style “action research”. I have challenged action research for the environment of Okinawa and air problem solving. We utilized the environmental capability of Okinawa (Okinawa is about ten centigrade. The environment is similar to Southeast Asia), and conducted the community experiment (one and a half year, 160t, five companies, 30 trucks) of bio-fuel import (Palm oil of 100% B100 BDF), and performed the hearing for spread and data collection.

In addition, palm oil was used all year, and appreciated well in Okinawa. It almost made no trouble. From such reason, although it is the outside of my specialty, we will tackle with biofuel business this time.

However, the palm oil adopted until now competes with edible one. Moreover, since the pour point was about 10 Centigrade, it decided to switch to the Jatropha. Jatropha is inedible, and the flow point is about 5 Centigrade. Therefore, various possibilities are explored to acquisition of a Jatropha,

import and spread in Okinawa.

Doesn't it become a certain reference by reading papers of a different field? Though I am a newcomer, I would appreciate your favor in the future.



First company taking over palm oil introduction

### I. What is Big Way Project, biofuel, and overseas development.

1. The outline of a project, three persons' role and an assignment. Using this project as a concrete case, I propose the biodiesel fuel overseas development project of Japan. Now, in advanced nations including Japan, are asking for the large-scale vegetable cultivation lot as biofuel resources and one of the measures against global warming.

This project adopted the importation encouraging development system, in order to allow large-scale development. A specific place is the land of about 30,000ha in Sulawesi Island, the southeast Sulawesi state, and the kolakla prefecture, in Indonesia. The Jatropha of non-food is planted here. The oil is pressed and imports it to Okinawa and Japan as biofuel.



Map of Indonesian Sulawesi Island

This project is the Indonesia corporation of Big Way International Indonesia Oil Ltd. (Big Way) and the agricultural corporation of KSU LAKKO (Lakko), and Japanese Yoshikawa laboratory Co.,Ltd. (Yoshikawa laboratory) will join this. Since the introduction to Okinawa of a Jatropha was considered, the Yoshikawa laboratory also participated it exactly. The reason why Yoshikawa laboratory joined in this project is that enforcement of the biofuel in Okinawa and activity in JICA were recognized (reference : Yoshikawa homepage, New Information in English.).

·Regional Promoter Upbringing, Educational Program

- Using the JICA-Net Development, Implementation and a Evaluation -

· Regional(Developing) Promotion Theory and Practice

- Taking Experience of Regional Promotion in Okinawa to Southeast Asia -

< three persons' role and an assignment >

Big Way mainly designs this whole project and management strategy, financing, adjustment, coordination, and negotiation with the Indonesian government. Moreover, Big Way already concluded a "land use basic contract" with 12 villages of a kolaka prefecture. Furthermore, Big Way got development permission from the Indonesian government, and has started it in part. Lakko mainly enforces Jatropha cultivation techniques, reservation of the place of origin, adjustment and negotiation with place of origin village people, and negotiation with Kolaka prefecture. Moreover, Lakko is due to implement the employment policy of the jobless people (about 1,000 persons) of Kolaka area. The reason why Yoshikawa laboratory participated in the project is non-food that does not carry out batting of the Jatropha to food. Moreover, it is because it was sympathy with development of biofuel, the local

promotion by it and poverty improvement. Moreover, this project adopted not BDF (biodiesel fuel) but SVO (straight vegetable oil). This is because an environmental problem and SVO is advantageous to the temperature property of Okinawa. In respect of technology, it is different from BDF with sewage or using chemicals. SVO, which is "pulling nothing that nothing adds." is an oil system that is good for environment.

Since the temperature zone is high, oil-heating kit is not used in Okinawa and it is advantageous to Japanese main land.



The talks with a member, and a luncheon  
2. The background, its need side and supply side

So to speak, demand (need side) is the measures against global warming. The measures are using biofuels and realizing the carbon neutral (CO<sub>2</sub> free gasoline). It is especially obliged to disappear a fixed numerical value by the ratio in six sorts of greenhouse gas in 2008- 2010 toward advanced nations compared to 1990 from the Kyoto Protocol December 97. There is legal binding force in reduction of 6% of numerical values of Japan. In order to realize these things, the demand for supply, import and developmental import of the biofuel in a developing country increases, and advanced nations are carried out mainly by EU.

It was supplied as biofuel until now focusing on the palm with sufficient vegetable tissue (similar to diesel oil) and sufficient oil expression efficiency. However, the cultivation ground of oil palm of palm fuel corroded tropical forest, and environmental destruction became a problem. On the other hand, oil expression is possible without destroying farmland and forest, though an expression efficiency of Jatropha inferior to oil palm. It is because Jatropha can cultivate on wasteland or dry land.

I will explain the example of Indonesia where supply side became possible by one side to the use needs of this Jatropha. Now, it became a big subject how "the

underdeveloped Indonesia eastern area" will be developed there in 1990. The purpose of this project is to develop the eastern Indonesia area. In addition, "the eastern Indonesia area" is the new concept defined by President Suharto determination in 1993. While this area (eastern area) occupies about 70 percent of Indonesia, but population is only 18%.

In cooperation with JICA, the "agricultural farm village development project" was carried out here in the model area in 1991 - 1997 (5 county 8 village of a southeast Sulawesi state Kendari prefecture). The farmer was stimulated by the example of cultivated land by the above mentioned farm village project, and profitableness of beginning fixed agriculture was realized. It can be said that this is because a rice crop and upland cropping were sternway like southeast Sulawesi state.

We could say extensive agriculture with a central focus on sago palm collection agriculture and traditional burn agriculture was continued. It can be said that it worked to plus that it was the environment, which begins agricultural farm village development from the situation near zero at cultivated land. After cutting down abandoned land and forest, Alan Alan grass invades, and the forest is not recovered. It is practical to use *Jatropha* on uncultivable land.

### 3 . The special feature of this project, large-scale development

The special feature of this project tends to utilize the chance (a need and supply) came from the measure against global warming (using biotechnology fuel cultivation), which is not realized in Japan easily. It will allow this realization by large-scale project (system) introduction.

This project realization, and if supply of a lot of biofuel is available, the economy of scale of refining, transportation and a stable supply will be possible. Financing by financial analysis (example, securitization), emission trading of biofuel and introduction of clean development mechanism (CDM) will be realized by it. However, all are based on large-scale development. As mentioned above, it is need to carry out a takeoff from the eastern Indonesia area (agriculture, farm village development). It cannot help

depending on large-scale development to manage the development fund for the area.

If this is reviewed from the world's takeoff history, it is obvious. Moreover it is also obvious in Japan, regarding the "Comprehensive National Development Plan" first "base development system" in Showa 37, as mentioning later. Furthermore, in the case like this, when the fund is not depend on government's development fund, and only supplied by private sector, it will be a large amount of money, and surely will become a large-scale development. However, there are many problems and issues to come along with this large-scale development. And, I think that my role is to solve these problems.

<What is large scale development?>

In Japan, Today, large-scale developments are not very welcomed. However, as W.W. Roast says, in "The stages of Economic Growth" ,depending on the situation of the country, the "precedence time" of "a take off" is sometime required. Isn't it? Isn't present Indonesia literally so?

Even Japan has had the same condition and situation. As a person who joined community development research because influenced by the success of Japan's "Kashimanada coast area comprehensive development", I could understand the trial of this Big Way Project. This Kashima Industrial Development (was conceived and planned as a part of "Comprehensive National Development Plan" in 1960) had made a harbor by introduction of technology of artificially-excavated port in a vast area of land in front of Kashimanada coast, a land which was completely valueless, and enabled industrial base construction on it.

And using the power of this Industrialization, were "agriculture and manufacturing development "and " poverty improvement" (Iwagami system, Governor at that time) which making agriculture possible (making rice cultivation possible on a land which, in those days, could only made potato). And in order to realize this, a certain amount of scale was surely required and, as a result, it contributed to the takeoff of industry in Japan.

Please refer this on "what is a large-scale development project?" and "Okinawa new scale development project theory?".

Reference: Please refer to my website

## . The possible risk of this project

### -From a biofuel policy to corporate strategy -

For a third party, this suggestion might seem to be created for our own convenience. Therefore, I will clarify the risk of this project.

1. Is it impossible? The international duty of the Kyoto Protocol

If this situation would not change, Japan's international promise seems to be impossible to realize.

Kyoto protocol has come into effect since February 2005. It has become our duty to reduce Japan's CO<sub>2</sub> emission by 6% per year compared to the year 1990 during 2008 - 2010 period. However, the current situation is that carbon-dioxide emission does not decrease at all. In fact, in 2006, it has increased by about 14% compared to the year 1990. To solve this problem, the introduction of carbon-neutral and renewable biofuel in 2010 was decided. The current domestic production of the biodiesel fuel (BDF) is only 2000t/year.

However, the target amount of introduction is 500,000t, so it is obvious that Japan has to depend on import to achieve this goal.

The deadline of this goal, 500,000t, is 2010 and impending. It is said that achievement of this goal is almost impossible. Furthermore, European countries such as Germany implemented large-scale purchase of jatropha including palm oil produced in South East Asia. Japan is filled with mood of resignation.

Japan will hold a big risk that we cannot achieve international promise.

2. Country risk, such as an export embargo

With the deployment of an overseas project, there are some country risks in candidate countries. In here, candidate country is Indonesia and the politics, economy society, and environmental change in Indonesia are country risks.

Avoiding this risk by derivatives is difficult.

Recently, as for biofuel, Thailand decided on the export embargo of palm oil. Probably, you can conclude that the country risk of the export embargo of jatropha is possible in developing countries, such as Indonesia. There is no individual or special measure for this risk. It is important that how to promote the deep relation with and promote regional development in the country of Indonesia and the target area.

It is in agreement also with the mission with which the laboratory tackled this project, local promotion, and environmental

preservation. Moreover, the "decentralization-related law" was enforced under the Megawati Administration in 2001, and, unlike before, "distribution of power" is progressing by expansion of local autonomy and democratization. I am going to enable permanent supply of jatropha by pushing forward our project unified with local area. Specifically, I aim to relate jatropha cultivation to poverty improvement.



Let me introduce myself. I am Yoshikawa of Yoshikawa Laboratory. The background shows the planting of edible soybeans and jatropha in the back.

3. Securitization, its problem and challenge

The point of this project is to make securitization possible by expanding cultivation area and production scale. That is, we try to realize the project by avoiding a risk by derivatives and making financing possible.

However, Japan does not have many examples of securitizing cash flow to the project which is easy to be influenced by the weather like agriculture. Although Tokyo Star bank (August, 05) performed this kind of securitization by 400 million yen, this was the first case in the agricultural field. However, this is plantation agriculture in factory, and the weather does not have much influence. Moreover, there is no credit rating agency (for example, Moody's) which guarantees this agricultural security. Therefore, I wish to propose the new type of securitization combined with weather derivatives (Nomura Securities Co.,Ltd), which would enable risk hedge.

Moreover, in order for the economic effect in the whole village to prevail at certain speed, such large-scale development may be necessary. The concept of subprime loan, which is a big problem these days, is mutually complementing a risk with great number. On the contrary, I want to suggest a proposal (relation whose face is visible) that is completely opposite to this "large number complement" in III. 2. Moreover, DCF

(discount cash flow) trying to measure the current value of this project, which would become the foundation, such as securitization, is planned to be shown at a later date. Here, many derivatives were combined, the risk was enlarged to the most and 20% of discount rate was shown. I want you to know the current value of this project and the scale necessary for securitizing by this.

**. The proposal of a new business model, request and question**

Next, I want to show the proposal of a concrete business model and a request based on the statement of principles ( )

**1. Unification by cooperating on local development**

If the lively industry and employment were not produced in a community, the solution of environmental problems and continuous supply of jatropha would be impossible.

The development project of jatropha also must be conducted for the purpose of community development. Concrete support activities in this area were shown below by a run of the item. Although this story is based on the activities conducted in Okinawa, it is possible to come up with support activities utilizing the characteristic of each area.

Carry out the development making use of experience in Okinawa, such as prevention of red clay outflow in the development in mountain area. I have already asked them to avoid the development and felling in the upper part.

Reduction of infant mortality rate. The improvement of sanitation is required.

Using some jatropha (oil), introducing private power generation and making an electric light at night, television, etc, possible.

Of course, motivation is necessary for labor. A long time ago, Oita Prefecture chanted "Let's go to Hawaii by means of planting plum and chestnut trees" in the One village one product movement. We consider in introduction of electricity, maintenance of living environment, a young people's dream and purchase of one motorcycle for one household. For example, it is possible to create the model of a future residence and give concrete presentation.

**Children's education**

We need local people to understand Japanese and Japan. Therefore, we consider allowing them to enter the Japanese language department of

Okinawa University. Probably, you can consider that the country risk of the expert embargo of jatropha in developing countries, such as Indonesia, is possible

How to deepen the relation with Indonesia is important. It is also in agreement with the mission, which we tackled in this project, local promotion and environmental preservation.

**2. Making "local production for local consumption" possible in a city area, too**

There is one life style called "local production for local consumption". It is not limited to biofuel but is applied for food and life substance.

It means that one area consumes the products produced in the same area. However, only limited people and area could perform it. Therefore, although we are tackling in the city (advanced country's) area, I will propose whether "local production for local consumption" is possible with biofuel and how to achieve it. We are now tackling the durability and preservation in the area concerned. We would have a third party organization prove this and issue something like "green-bio certificate" for our commitment.



Is it possible to get certificated by the third party organization. Discussion with the representation of NGO (Coordinator of JICA-NGO Desk Indonesia: Mr. Mulyono Lodgi)

If the biofuel with such certificate is purchased, a city area could execute and "local production for local consumption" becomes possible. This is a system which assumes that they produce or consume specific fuel (for example, biofuel with certificate). Even if biofuel producer does not actually consume it, the same effect as when they actually consume it would be gained under this system. That is, this system support the biofuel producer on maintenance and operation cost and preserve the place of origin.

An example of biofuel with certificate  
<http://www.wikikrokinawa.or.jp>



### 3. Another securitization and visible-face relationship

One of the best parts of this project is that it enables securitization by extending a cultivation area and production scale and reduces a risk by derivatives. In addition, this project would be realizable by making financing possible. This suggestion is different from the method to complement a big risk such as the subprime loan which now becomes a problem. It is another securitization that is different from "a large number complement" I want to propose the relation which can concretely realize "relationship in which face is visible (visible-face-relationship)" in financing by this securitization or investment. I also propose "realization of local production for local consumption (in city)". When this invested security is purchased, buyers have bio-jatropha fuel supplied to their car. In addition, I suggest discounting the price of bio-jatropha fuel. "Visible-face-relationship" in the place of origin and "local production for local consumption" in city, can take shape also in respect of capital by my suggestion. In other words, the consumer using jatropha fuel is conscious of the place of origin in this way and thinks about a saving. On the contrary, the producer is conscious of the consumer and can have significance and cooperation of the production.

### 4. Request for experts, Fundamental difference between jatropha and palm oil

Biofuel is now moving from palm to the jatropha due to "food or fuel" discussion. However, production efficiency of jatropha is lower than palm oil. An essential difference between palm and Jatropha is whether it is edible or non-edible.

Now, WOOC (World Oils & Oilseeds Convention) was held by the end of last month (September 9 - 11), and Mr. Chandran made following remarks. "The simple argument of "food or fuel" in which food always has priority for granted is dangerous. Why it is a bad thing that poor farmer makes more money and buys various foods by selling crops for bio-energy? The line must be

drawn if it is said that food production is morally better than non-edible harvest.

Who made such subjective judgment and had the right to carry it out? (Comment by the author: The market is actually judging and carrying it out now. It has caused the big problem.)" I also think that the fundamental difference between palm and jatropha is not whether it is food or a non-food as Mr. Chandran mentioned. I think the difference is in the structure of the influence on farming village (settlement) society. In case of palm, the decomposition of the lipid in the fruits is quick. Therefore, it must be processed with steam within 24 hours. As a result, farm for palm must be plantation-type and intensively constructed on large scale. Thus, palm fruits do not fit long-distance transportation and must be treated with heat and conducted oil press immediately at the factory near the harvesting area. Consequently, certain settlement chooses to cut down a forest, grow palm and let residents live only in a certain area necessary for the harvest. It is not same as simple palm cultivation. On the other hand, since jatropha is not time-sensitive in the processing, it does not cause such problem.

In case of palm, a plantation type farm (large-scale development) could also be constructed to achieve economies of scale, On the other hand, it is also possible to carry out jatropha cultivation in small scale if they only need energy fuel for private use in a settlement. It is possible to choose from small, middle or large size. I want to ask experts the essential difference between palm and jatropha.

<Yoshikawa office in Jakarta>

It is necessary for an office for Jakarta in negotiation with a government relation, and a previous arrangement. We are allowed to establish the office of the Yoshikawa laboratory in the Big Way Indonesia office. It is located in the core of very convenient Jakarta and faces JL.M.H.Thamrin. It is "Menara BCA Grand Indonesia."

For the details, please visit my Web page (<http://www.h-yosikawa.com>). Highlight is the profile and new information written in English.

This project is complex and large, so there are several types of business models. Please contact us if you have any interest. ( E-mail : [yosikawa@h-yosikawa.com](mailto:yosikawa@h-yosikawa.com) )