

Agricultural Cooperatives as PPP Organization

—Based on the research project on Butuan City, Republic of Philippine—

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1. Introduction

Research Center for PPP at TOYO University addressed a mission to Butuan City, located in north side of Mindanao Island, Republic of Philippine, from September 4th to 11th in 2011. Our team made a proposal for Butuan City, as “PPP Possibilities for the Future of Butuan City”, this is a concept study report of using PPP to develop economy and regional development. I wrote Section 1 (Importance of Agriculture ; Key Industrial Sector For Poverty Reduction) of CHAPTER III (Butuan’s Lemon and its Prospective PPP Projects)^{1,2}

In this report, I will try to show the background of proposing Agricultural Cooperatives as PPP Organization.

2. Background: Poverty Reduction Goal of Butuan City

Butuan City has been running for a poverty reduction plan, in order to achieve the goals of 2016, current Gross Regional Domestic Product (GRDP) in six years or target over 33% average annual growth.(Table 1)

¹ This report is already uploaded in the website of APPPI (Asian PPP Institute). Please see detail of the report in APPPI website. (<http://www.apppi.net/>)

² Making process of this part of the report, I was supported by Mr. Takahiro SEKINE (Itakura Town, Toyo University PPP Graduate School Student) and Ms. Yu NAMBA (Research Center for PPP at Toyo University). And, many people we interviewed gave us technical information to analyze the possibility for PPP. I show grate thank here for the support they gave me.

Importance of Agriculture ; Key Industrial Sector For Poverty Reduction

Table 1 Development goal by 2016

DEVELOPMENT GOALS BY 2016	
<p>-P300 B Annual GRDP; PhP 100,000 +++ Per Capita GRDP</p> <ul style="list-style-type: none"> • triple current GRDP in 6 years or target a 33+% average annual growth 	
	

(Presentation of Butuan City Mayor, September 4th in 2011)

Poverty reduction as policy objectives, the goal has been to increase the annual income of 18,300 pesos to one per household. To achieve the policy objectives, it is necessary to increase approximately 33.3% of 54,900 pesos per household annual income of poor families of the current one. (Table 2)

Table 2 Poverty reduction approach

POVERTY REDUCTION APPROACH	
Total # of households	59,675
Poverty incidence of families	30.00%
Magnitude of Poor Families	17,903
<p>If per capita poverty threshold is ~ P14,000 or about P1,200 per person per month, then monthly household poverty threshold for a family of 5 is about P 6,100.00 or an annual requirement of P73,200.00</p>	
Assume that these poor households on the average are only having 75% of the requirement [P6,100 * 75% x 12= P54,900,00]	54,900.00
Then they need an annual incremental income of (73,200-54,900)	18,300.00
<p>Multiply with the number of poor families = Total incremental income needed to raise poor families above the poverty line</p>	
	327,615,750
<p>Where will they get this? From what productive activities? How much investments are needed to set up income producing activities to allow households to earn this required incremental income? What support facilities and activities will the LGU undertake?</p>	
	

(Presentation of Butuan City Mayor, September 4th in 2011)

From Butuan City Mayor presentation materials, Butuan City is not standing in a situation to take measures for assistance and prospect for production activities to achieve the policy objective of poverty reduction, investment.

Agriculture is key industrial sector for poverty reduction because population engaged in agriculture is high. So, Our team thought that improvement of agricultural productivity is considered to be essential for achievement of poverty reduction.

3. Problems in Rice Farming

But, we found some structural problem in rice farming to be solved.

a. Low Yields/Under Utilized Land

Average rice yield per hectare in the Philippines has been 3.59 tons whereas Japanese has been 6.52 tons. (Table 3)

Due to low productivity, it is considered that the Philippines need to import rice. If the Philippines accomplish the yield of 5tons per hectare as of Indonesia and Vietnam, it can be expected to export in reversal.

In Butuan City, average yield per hectare as of 2010 to Sep.2011 is 2.8t/ha to 4.3t/ha. Yield income efficiency is widely different by year and seasons. (Table 3)

b. Inefficient Labor

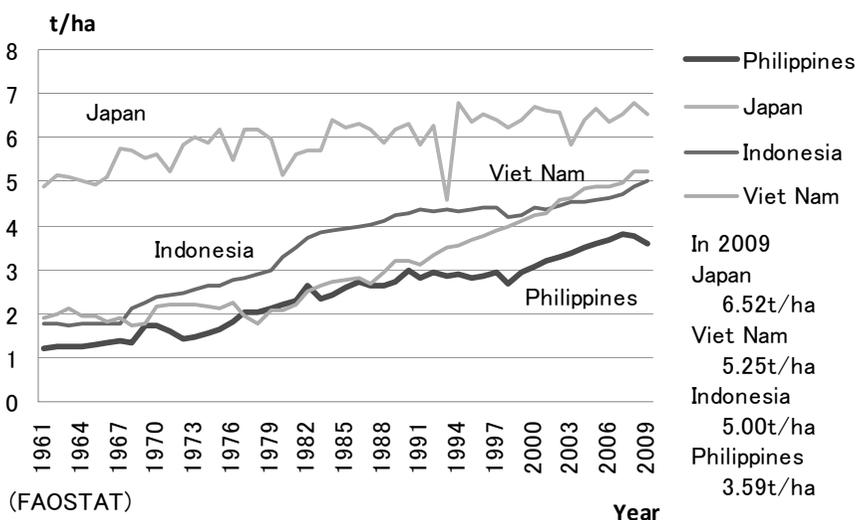
In the Philippines, almost all the works are manual in rice farming. Therefore, it has taken a lot of manpower and time required for planting and harvesting labor in rice farming. The aforementioned problems of the poor is considered that may due to lower per capita distribution of income from rice farming, it requires a lot of farming manpower.

c. Land load/Lender and Tenant/Borrower

In the Philippines, large percentage of agricultural land is owned by landowner and small percentage agricultural land is owned by farmers. Some of the previous governments of the Philippines, despite government efforts to reform the system exists land is in a state of reality is still developing.

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Table 3 Rice Yield tons/hectare in neighboring countries



4. Problem-Solving Orientation

Toyo University research team concluded problem-solving orientation by improving rice production (fertilization and cultivation techniques), mechanization (the introduction of machinery), and reasonable finance (rational organized approach to the introduction of financial). (Table 4)

It may be difficult to solve these three problems right now, and requires patience both landowners and farmers. But, we recommend Butuan City and the citizens to make partnership in order to solving poverty problem for the future citizens.

a. First Recommendation : Fertilization

To increase rice production, is required for conversion to efficient agriculture, it requires breeding of high yielding rice that meets land criteria, improved cultivation techniques, and infrastructure development.

Average yields in trial rice cultivation has been largely planted in the Philippines was 5t/ha (yield up to 7 ~ 10 t / ha) ,but 3 t / ha yield in actual cultivation was estimated that the problems in cultivation techniques.

Table 4 Problem-Solving Orientation

 東洋大学 <small>TOYO UNIVERSITY</small>	
<h2>Problem-solving orientation</h2>	
■	Low Yields/Under Utilized Land
□	Fertilization
■	Inefficient Labor
□	Mechanization
■	Land owner/Lender and Tenant/Borrower
□	Reasonable Finance
✓	Cost of Rice borrowed from miller companies (high interest)
✓	Market price and distribution cost (77% surcharge)
✓	Not sufficient simply providing Deposit & Lending (Including Leasing), Technical Assistance is required

(final presentation of Toyo Univ. research team to Butuan City Mayor)

i. Fertilization

By investigations to the rice farmers and agricultural professionals in Butuan, our team found the problem that most farmers cannot fund the purchase of fertilizer and showed that many farmers have been cultivating rice without fertilizer.; i.e. it seems to be difficult to buy fertilizer unless Land-Owned and affordable to fund driving money.

Suppose, if we can be fertilized three times during the cultivation of fertilizer, yields can be expected to increase 20 to 40% at least, and in some cases it may be expected up to 10t/ha harvest.

ii. Cultivation

Spacing for planting, the standard distance was 20cm × 20cm. In Japan, the prevalence of sparse planting cultivation of strains 30cm × 20 ~ 30cm across conditions. Sparse planting cultivation has increased the amount of rice tillering, panicle yield due to larger stems are thick and flat and can reduce the cost of purchasing seed and seedling planting in order to reduce the number.

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b. Second Recommendation : Mechanization

For agricultural work, Butuan farmers use water buffalo to plow paddy fields and plant and harvest by human working. 1ha of planting to do, farmers need 10 people a day in the work effort, so period workers hired from outside area are needed. To hire period workers, farmers need 16% of yield as a reward.

i. Improving Efficiency by introducing Machineries

Agriculture in developed countries are proceeding with mechanized efficiency. By taking advantage of the used machines, these are no longer used in developed countries, can be expected to raise agricultural productivity. By planting and harvesting by mechanic, farmers reduce the work done in labor-intensive and management during the period of training. Then mechanization will enable farmers income raised because regional labors surplus are expected to work in new jobs.

For example, by using agricultural machinery, farming efficiency (working width, work rate) will be improved. Introducing machinery increase work efficiency because it is possible to finish the appropriate time to focus on short-term, it is possible to improve yield and quality.

Table 5 Effect of Introduction of Agricultural Machinery in Rice

	Working width (m)	Work speed (km/h)	Work efficiency (ha/h)
Man-power	0.9	0.3	0.03
2-line trans planter	0.6	2.7	0.16
4-line trans planter (Crank type)	1.2	2.1	0.25
(Rotary type)	1.2	3.9	0.47

(Toyo Univ. research team calculated from agricultural machinery catalogue)

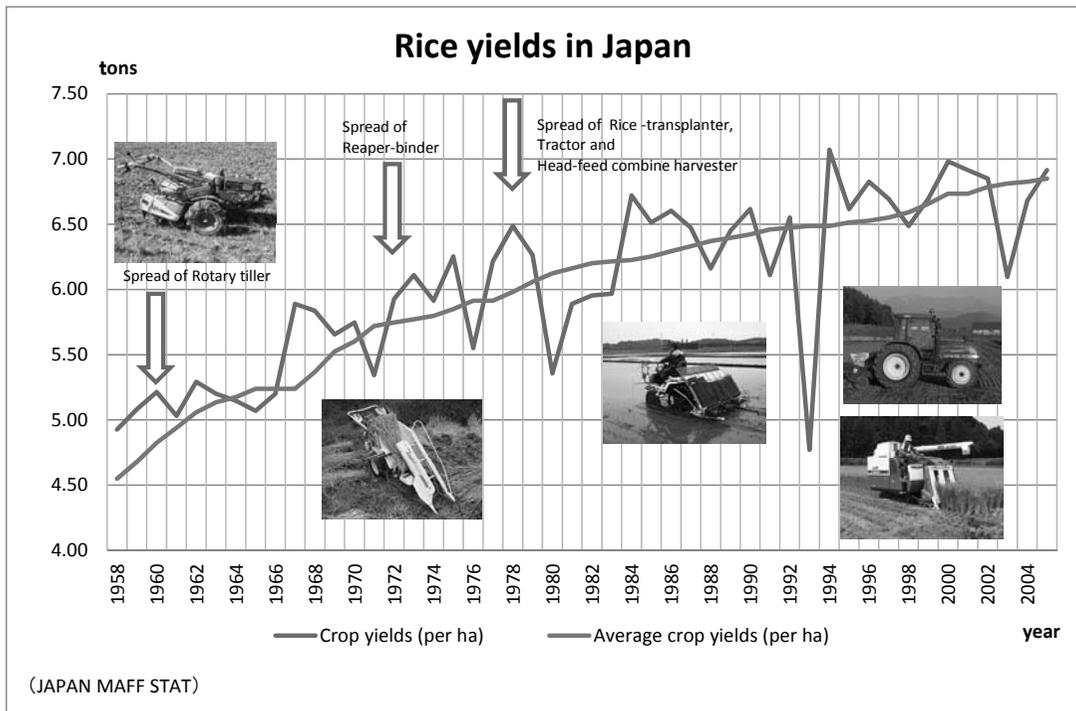
ii. Reduction of Workload

Farm work is hard work by manpower. Farmers can reduce the burden of the agricultural mechanization.

iii. Improve profitability

Increased revenue by improving yield and quality, by birth surplus labor is labor savings. Using this surplus labor, and to streamline management, it is possible to develop business. Japanese rice yield has grown up in a long term as shown in Table 8, some parts of development seems to be contributed by introducing machinery.

Table 6 Improvement of Rice yields in Japan (tons / ha)



c. Third Recommendation : Reasonable Finance

The introduction of the machine needs to invest anew. You can take advantage of aid from developed countries, by utilizing the machinery used, the initial cost can be suppressed despite the possibility that the increase in revenue to cover maintenance costs through the introduction of mechanical equipment to maintain conditions can be introduced.

In the current income level of farmers is to maintain bought only at the expense of farm machinery is considered to be difficult. Therefore, the municipal government Butuan, landlords, financial institutions (such as microfinance), including

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partnership, the initial investment and maintenance costs everyone (government, landowners, farmers) in introducing a set of reasonable rules about how to pay the would be necessary. In this regard, going towards the common goal to reduce poverty, governments to overcome the traditional conflicts of interest, landlords, financial institutions (including microfinance), we designed the farmers and their roles by considered to be key.

Moreover, before the introduction of mechanical problems, challenges exist because the market price of rice and rice now costs required, including those "reasonable financial methods" should be considered.

i. Issues Related to Costs of Rice

According to a survey by interviews, rice farming can cost 25,000 peso per 1ha, many farmers are required to borrow 15,000 ~ 20,000 peso. This is not borrowing from banks but from rice miller companies. A bag of paddy(50kg) per 1,000 peso are required as interest to be repaid, we presume the interest rate to be at least 60% per year.

That is, since it is not sufficiently developed financial system for the farmers, there is a need to borrow at high interest from companies such as rice, farmers' income has been reduced.

ii. Issues Related to the Price of Rice in the Market

Purchase price from the farmer is 15 peso / kg in the paddy, and revenue of 50,000 ~ 65,000 peso per hectare and a typical yield. Because of fees, expenses are drawn to the loan repayment and work here, real income of farmers is low. It has become difficult to buy fertilizer for the next cropping season of its own funds.

Price of purchase from farmer is 15 peso / kg, but the retail price is 38 peso / kg in rice. Assuming a weight loss of about 23% for brown rice from paddy, and assuming a weight loss of about 10% for rice from brown rice, weight from paddy to rice will be about 70%. Considering lose weight, brown rice buying rate (15peso/kg) was translated into $(15\text{peso}/70\%)=21.5$ peso/kg. Gap between 21.5/peso (from farmers to rice millers) and 38peso/kg (from rice millers to consumers) is $(38\text{peso}-21.5\text{peso})=16.5\text{peso}/\text{kg}$, this means $(16.5/21.5)=77\%$ surcharge. Distribution costs in

the case of Japan is approximately 60%, so 77% is not necessary high, if you take into consideration of high rate lending to farmers as shown in above, the distribution system and finance scheme for farmers are should be reconsidered.

If distribution costs kept in low, this benefits for farmers and consumers.

iii. Implementation of reasonable finance

Implement a reasonable financial, not sufficient to simply introduce deposit and lending functions, to have the loan (up to a debt) technical guidance for new initiatives that do fit the results is required.

5. Agricultural Cooperatives as PPP Organization

a. The proposal of establishing BAC (Butuan Agricultural Cooperatives)

i. The need for institutions to support farming

Problem-solving orientation of farmers, improving rice production, the introduction of machinery, the introduction of the three methods was reasonable financing, they are closely related, may function in an integrated manner must be considered.

If the payment terms are set according to the cash flow of farmers, there is a possibility to reduce the burden of interest on loan from rice millers,.

In other words, financial support to farming has leverage, and the introduction of agricultural machinery, the introduction of high-value rice varieties in Japan and other overseas, to strive to diversify its business and the implementation of livestock is the desired.

In Butuan City research, we strongly note that there are some good microfinance institutions in Butuan City. In the website of RBAP(Rural Bank of the Philippines), a trade organization for farmers microfinance institutions, three institutions headquartered in Butuan City. We visited one of microfinance institution headquarter located in Butuan City, “Green Bank of Caraga, Inc.” (former “Rural Bank of Nasipit”) and interviewed on President. We have confidence in the thought of not only banking (supplying deposits and loans), but also desired technical guidance (TA: Technical Assistance).This means people in Butuan City already had a strong key-tool to develop agriculture for farmers, but,

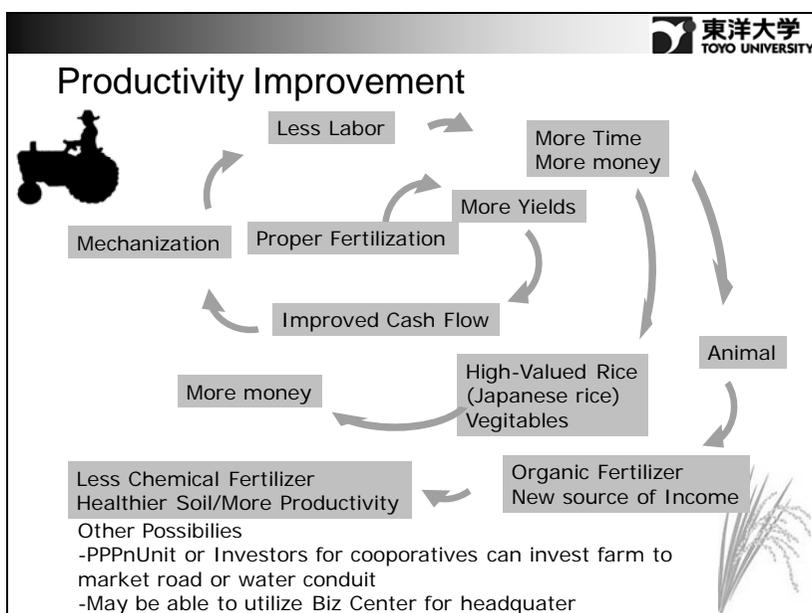
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they had not been built formal partnerships among them.

If Butuan City has collaboration with these organizations, government agencies, including government-affiliated financial institutions (DBP: Development Bank of Philippine, Landbank), and existing private financial institutions, self-reliance improvement in agriculture seems to be possible.

Productivity development in rice farming requires fertilization, mechanization and reasonable finance as already mentioned. They are to be connected to make proper development cycle.(Table 7) But, it is hard to collect all the resources by farmers. For the goals of poverty reduction, LGU and Central Government should coordinate farmers and related institutions, and make partnerships among them. Then, people would gain more products and money.

Table 7 Image of Productivity Improvement



(final presentation of Toyo Univ. research team to Butuan City Mayor)

ii. Case of Japan Agricultural Co-operatives

For example, in Japan, JA (Japan Agricultural Co-operatives) are established in the form of participating farmers in all regional, then 3 major operations (procurement, agricultural machinery, crop sales support) are provided integrally as

follows.

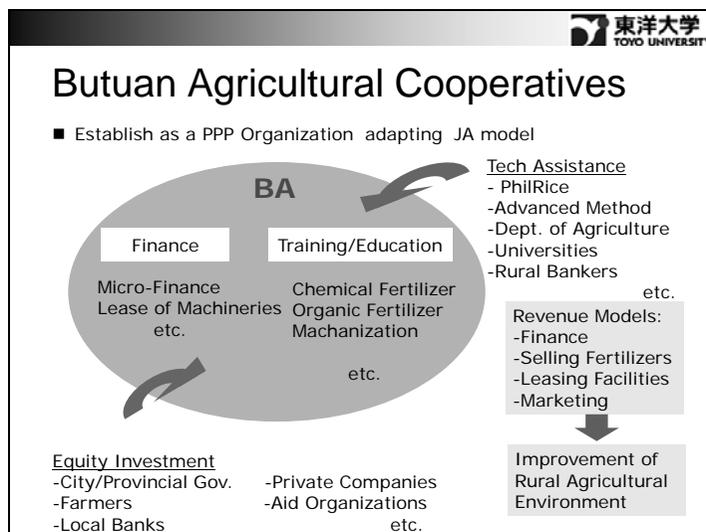
- ✓ Sell fertilizer to farmers, such as procurement
- ✓ Perform maintenance and rental and sales of agricultural machinery agricultural machinery.
- ✓ Purchase and distribution of agricultural crops from the shipment for sale, to sell to consumers

iii. Image of BAC(Butuan Agricultural Co-operatives)

Mechanism of JA may not be the best, but in order to improve the terms and conditions of the current Butuan City farmers, farmer-oriented organizations (Association) will be favorable for farmers to changing terms and conditions of crops.

Also, it would be difficult to make detailed assistance to cover all farmers by Butuan City and central government organizations. So, the government (ex.Butuan City) , local private organizations , farmers, foreign aid agencies and private finance institutions collaborate together to establish BAC (Butuan Agricultural Cooperatives), in order to achieve a citywide economic development through higher incomes.(Table 8)

Table 8 Image of BAC



(final presentation of Toyo Univ. research team to Butuan City Mayor)