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# ***PALAWIJA***

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## **Comparative Advantage Analysis of Cereal Crops: Practice in China**

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The approach of comparing advantage of cereal crops is increasing in significance in theory and practice. With the constant development of the world economy and the shaping of the new patterns of productive forces, agriculturists are paying more and more attention to research on coordinating and making the most of the advantages of different crops.

### **Comparative advantage: its Practical Significance in Agricultural Development in China**

As a developing country, it has always been difficult for China to feed its large population. From the founding of the P.R.C., especially after the reform and opening to the outside world, we have made great progress in grain production. In 1990, the national grain output was as much as 435,000,000 t, reaching the highest record in history. With 7% of the world's cultivated land, China feeds 1,100,000,000 people, 22% of the world's population.

However, grain production in China is still as low as 400 kgs per capita. From 1985 to the present population has increased with 16,000,000 in China. This process is accompanied by a decrease of 1,000,000 hectares of cultivated land each year. In the years to come, due to the increased population and the rise in consumption, the demand for food grains will continue to grow. To its disadvantage, China encounters frequent natural disasters such as droughts and floods. In

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some localities they happen almost every year, while bad ones occur every five years. Therefore, for a long period to come, China faces a serious shortage of food. The P.K.C. must therefore take comprehensive measures in line with local conditions, give full play to the advantages of different crops in different areas, readjust agricultural policies to increase capital input and mobilize the initiatives of farmers and others.

In promulgating food policies and plans, one needs a good understanding of the basic economic situation in China. As a developing country which is not yet fully industrialized, China has a lack of funds and materials. It can only afford to allocate limited funds and materials into major projects with well planned programmes. First the best crops need to be selected, in areas with the best natural, social and economic conditions so as to ensure positive results. The evaluation of the advantages and disadvantages of various crops is the main topic of this paper. In brief, our way is to study the production history and present situation of crops; calculate their productive potentials; analyse their productive advantages; and then considering the social environment, make a comprehensive evaluation; and last, produce a development plan.

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## Analysis of Productive Advantages

For the purpose of developing the advantages of one crop, one ought first to find out what its potential increase could be and its commercial potential.

There are many methods for calculating productive potentials, among which are the Comprehensive Mark and the Production Function. For the Comprehensive Mark, one chooses a group of productive capability evaluation indexes such as sown area, yield per unit area, effective irrigated area, standard of instruments; then one gives each factor an index number according to its importance; and finally, in line with the score of each crop, one arranges a production potentials order. By this method we can get the relative order, but it is difficult to calculate the exact potential quantity, so we consider it a method of qualitative analysis. Production function predicts the amounts for productive potentials by way of setting up certain production functions - based on historical data and technology. Without doubt this method has its scientific basis, nevertheless, data are not easy to collect, and the potential amount is influenced by too many factors, so that there always exists some difference between it and reality. We adopt the following formula:

$$Q = E \sum (Y_i) - Y_i$$

Q = Potential Si: Sown Area

Yim + The Highest Yield Yi: Average Yield

This formula reflects the production potentials of each crop in an area in a certain period. It is the result of many productive and economic factors. With this formula, we have calculated the production potentials of the main cereal crops in China. The data were based on the grain production data during 1987-1988 of 320 commercial grain counties in six grain producing regions: The Northeast Plain; Plain of the Yellow River, HuaiHe River and Haihe River; Plain of the Middle and Lower Reaches of ChangJiang River; ZhuJiang River Delta Plain; Middle Hunan Hilly Area; JiTai Basin; Southeast Guangxi Tableand and the semi-arid region of inland Northwest. The study led to the finding that there is a potential for rice of 10,970,00 t; wheat 11,520,000 t; maize 25,690,000 t; soybean 4,670,000 t; (Table 1). It is evident that the potential for autumn grain is a slightly higher than that for summer grain, coarse food grain has the same potential as wheat and rice; and the distribution of potentials appears uneven. This method is applicable to smaller areas such as a county as well.

Some scientists also suggest the Liz Formula. First, the local productive potentials are calculated with data of light, temperature, rainfall and so on; then the local potentials are divided by the food crops in that area. What we get through this process is a theoretical value. It is useful when we try to find the real value, and the real utilization ratio of theoretical potential.

## Relationship Between Production Potentials and Economic Advantage of Crops

Potential increase of production is an expression of the existing production forces. The properties and advantages of crops are expressed in dynamic interaction with the social economic environment with the producer as the economic basis. Crops with production potential do not necessarily have economic advantage. Transformation of potentials into advantages depends on several factors, principally:

### 1. The market

Demand in both international and domestic markets influences producer decision. In the domestic market in 1986 the composition of grain production was as follows: rice 44%, wheat 23%, soybean 3%, maize 18.1%, potato 6.5%, and miscellaneous 5.4%. But the composition of grain consumption is as follows: rice 44.1%, wheat 25.1, soybean 2.1, maize 1.6, potato 6.3, miscellaneous 6.4%. It shows that production of rice tends to be in balance with demand; wheat is in short supply; the consumption ratio of soybean and maize is smaller than that of production, but not in excessive supply. From the perspective of the international market, if we want to increase the export of soybean, which is a traditional export, from China we have to increase its production in areas with convenient transportation, such as the Northeast and the Middle South of China. At present, export of maize is still very limited. However, there exists a wide market, mainly in Japan and the Soviet Union. Therefore China could increase its production in suitable areas in the Northeast, near these two big markets.

With regard to rising consumption and the increasing demand for soybean and maize, it is wise for us to see their economic advantage and try to make the most of it.

### 2. Requirements of local economic development

The dynamic equilibrium balances the amount and structure of food demand and supply. It requires a good combination of main producing areas and ordinary areas. Then, as transportation

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## **Editorial**

### **Comparative Advantage on the Ground**

Seiji Shindo,  
Director  
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This issue of the Newsletter presents recent studies of the comparative advantage analysis in applying "Policy Analysis Matrix (PAM)" carried out in collaboration with the Centre's partners. The method is relatively simple yet, when it is properly applied, can indicate the comparative advantages among crops in terms of both profitability at farm level and efficiency at "social" level. At the same time, it shows to what degree government policy incentives or disincentives are being given.

In the light of the Centre's aims to initiate and promote research and development in socio-economic aspects, provisions of useful, effective and practical methods of research analysis should play an important role in the Centre's programme. Training of researchers in

such methods should be emphasized as a means to this end.

The analytical methods of socio-economic research range from those of a descriptive and empirical nature with simple statistical analysis, to sophisticated econometric ones. The methods to be adopted in individual cases should be appropriate and flexible enough to adapt to the situation. A common method for socio-economic studies on CGPRT crops does not exist. What is required is to make various methods available to researchers who would select the most suitable approach to a given situation.

In many countries in the region, the extent to which CGPRT crops like soybean, maize, food legumes and cassava should be produced in a country is a difficult, sometimes even controversial, issue faced by researchers and policy makers. The comparative advantage analysis derived from PAM demonstrates interesting results in the case studies. In Indonesia, the two survey sites were chosen from the traditional soybean producing areas; one in fertile flat lands, another in a less fertile and undulating area. The result in PAM reflects the difference of location. The former site is profitable in both private and social

terms, while the latter is only profitable in private terms. It implies that given the current level of policy incentives, comparative advantage of soybean production is sensitive to the yield variability even in a major producing area.

In Thailand the study is located in an area where the effect of rapid economic growth is felt strongly. Wage levels and land prices have increased considerably there in recent years. Thus soybean has lost comparative advantage to new crops like onion and garlic. Though social profitability is positive only in export regimes for soybean seed, this is regarded as hypothetical and unrealistic. The degree of policy distortion in soybean as measured by "protection coefficients" is generally lower in the Thai than in the Indonesian sites.

The adoption of and decisions on policies are the prerogative of individual governments while the Centre can facilitate the process by providing information and methods for obtaining economically reasonable options and solutions. The provision of training and application of various analytical methods should be instrumental in this process, as implied by the results of these case studies.

is not yet fully developed in China, it may be so that if a certain crop is produced excessively in one place, it will cause transportation problems or monoproduction market dependency.

#### **3. Practical conditions for production and levels of comprehensive utilization**

As explained above, practical conditions for production are mainly expressed in production potentials. These are natural conditions. For example, in some places the temperature is suitable for high productivity. Rainfall is another indispensable factor, including irrigation, then there are tillage systems, cultivation techniques, and the level of farmer's farming skill and facilities. Production potentials do not equal economic advantage. There remains the problem of high utilization of potentials. Furthermore, one cannot ignore the influence of comprehensive utilization of crop products and subsidiary goods. The higher the comprehensive use, the stronger the advantage of that crop.

#### **4. Agricultural Policy and Law**

By either restricting or promoting the use of potentiality, government policy and law play a

unique role in agricultural development, especially in the input of funds and materials and the motivation of the enthusiasm of farmers and entrepreneurs.

#### **Promoting Transformation of Production Potentials Into Economic Advantage**

There is much to be done in China to promote the full potentials of grain crops, in particular coarse grain, pulses, roots and tuber crops, and to turn them to economic advantage.

1. In view of the uses, potentials and role in the economy of crops, we must make a practical development plan, establish a set of programs, and invest sufficient money, materials and technology to put the plan into effect.
2. Distribute the best key seeds and practical advanced technology. Organizations for research, education, production and others concerned should collaborate to select and spread good crop varieties and technological services.

3. Raise the multiple crop index by making use of all uncultivated land, and adopting intercropping and interplanting.
4. Develop comprehensive utilization, develop new types of produce, improve organic rotation.
5. Make protective policies. According to the ratio of relative crops and their respective qualities, the government should make reasonable policies and laws to protect the benefits of farmers and their enterprises, e.g. set up reasonable price relations.

#### Reference

The Agricultural Ministry of PRC: "The Agricultural Production Statistics of Each County in China During 1986-1988".

**Table 1 Productive Potentials of Cereal Crops In Principal Grain Production Counties in Different Districts 1986-1988**  
Unit: 10,000 t  
10,000M U (666,7 Hectares)

District	Item	Crop	Rice	Wheat	Corn	Soy-bean
Northeast Plain	Sown Area		1024	1992	5200	3039
	Average Yield		453	242	1474	321
	Medium Potential		172	13	731	106
	Higher Potential		520	145	1532	175
Planes of The Yellow River, Huai River and Hai He River	Sown Area		586	9150	5080	1465
	Average Yield		222	2087	1263	122
	Medium Potential		38	405	664	88
	Higher Potential		93	736	950	200
Plain of The Middle and Lower Reaches of Chang Jiang River	Sown Area		1806	982	199	245
	Average Yield		1117	234	51	24
	Medium Potential		134	22	18	8
	Higher Potential		218	39	27	12
Hilly Area of South of Chang Jiang River	Sown Area		3693	427	629	864
	Average Yield		1332	80	202	200
	Medium Potential		113	15	20	33
	Higher Potential		242	28	41	57
Zhu Jiang River Delta Plain	Sown Area		542	11	38	29
	Average Yield		167	1	5	2
	Medium Potential		12			1
	Higher Potential		23			1
Northwest Inland	Sown Area		63	1656	497	97
	Average Yield		30	322	156	15
	Medium Potential		1	96	9	6
	Higher Potential		1	204	19	13
National Average	Sown Area		8714	14218	11643	5739
	Average Yield		3321	2966	3151	684
	Medium Potential		427	549	1442	242
	Higher Potential		1097	1152	2569	467

## Some Considerations in Analyzing the Comparative Advantage of CGPRT Crops in the Philippines<sup>1</sup>

Albert P. Aquino and Aida R. Libero<sup>2</sup>

### Introduction

The Philippine economy is still largely agriculture-based. Statistics on the economy's performance showed that Gross Value Added (GVA) in agriculture averaged about 27 percent of GDP for the period 1980-1990. Agriculture contributed roughly 50 and 32 percent of aggregate employment and total export earnings during years 1980-1987, respectively.

Rice is still the main crop in terms of area, production and value, aside from being the top-most political commodity. Next are the country's traditional sources of foreign income, i.e. coconut, sugarcane and abaca. However, as food sufficiency emerges as one of the major national goals, other food crops have started to grow in importance. Among these food crops, maize, cassava and sweet potato are considered major CGPRT Crops. In terms of area harvested, hectareage devoted to maize was highest at an average of 3423 ha followed by sweet potato and cassava at 392 ha during the period 1980-1988. In 1987, the total value of maize production was estimated at eleven billion Peso and relative to maize the values for sweet potato, cassava, groundnut, mungbean and soybean production were estimated at 14.3, 4.1, 3.0 and 0.4 percent, respectively.

Food sufficiency being a national goal, at the outset, the government can import and/or strengthen domestic production. However, the decision whether to import, rely solely on domestic production, or both, involves a whole range of complex issues. Can the country, as a whole, afford the foreign exchange requirements associated with importation? If domestic production is envisioned as supplying most of the food requirements, will it prove economically efficient given the present state and conditions of infrastructure and related support services,

<sup>1</sup> Paper presented at the Regional Workshop on Methods and Procedures for Comparative Advantage Analysis of CGPRT Crops held in Bogor, Indonesia on 4-9 November 1991.

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macro-policies on price and trade, and market structure. Enhancing domestic production can mean more extensive farming, increasing cropping intensity, and/or improving productivity. Given land as a finite and scarce resource (with its many alternative uses) and a staggering population growth rate, improving productivity is seen as a viable avenue for meeting domestic production requirements. On the whole, resources and development aim to address this concern.

However, prioritization among various research concerns, i.e. across commodities and disciplines, is yet another complex issue. This becomes even more pressing due to the fact that resources and development expenditures and national support to resources and development activities have not grown significantly in real terms for the past few years. Hence, concentrating research on those commodities/activities which yield the highest payoff relative to other resources and development concerns becomes paramount.

#### **Objectives:**

The paper aims to discuss some considerations in determining the competitiveness of CGPRT crops in the Philippines by providing some insights into the applicability and the constraints in using different approaches to comparative advantage analysis given the peculiarities of Philippines agriculture.

#### **Some Conceptual and Methodological Aspects of Comparative Advantage Analysis**

##### *The Nature and Objectives of Comparative Advantage Analysis*

Pearson and Monke (1987) raised the following questions in the introductory portion of their document on *The Policy Analysis Matrix: A Manual for Practitioner*

- a. How can decision makers in developing countries easily understand the individual and cumulative effects of government policies that influence the competitiveness of agricultural production systems?
- b. What are the principal relationships between macro policies and economic efficiency of agricultural production?

Longmire and Winkleman (1985) were even more explicit in re-stating these queries as: **would particular industries compete over the long term in the international markets, given the removal of all government intervention like taxes, subsidies**

**and exchange rate distortions?** An empirical analysis of comparative advantage can address these issues. As a useful tool in agricultural policy analysis, it integrates two economic approaches, i.e. social cost-benefit analysis and trade theory (Altemeier and Gijsbers, 1988). Social cost-benefit analysis indicates that a crop or production system has a comparative advantage if it produces outputs- more efficiently than other crops or enterprises which compete for the same resources, e.g. land, dictates that a crop is efficient (and hence, has comparative advantage) if it can compete in the international market given the elimination of subsidies and distorting policies.

##### *Potential Uses of Outputs from Comparative Advantage Studies*

Byerlee and Longmire (1986) cited the following uses of comparative advantage measures/ indicators:

1. To help in deciding on investment in a production program-given existing technological coefficients and world prices, which domestic commodity production programs are efficient users of scarce resources?
2. To help in deciding on investments in research - it is certain that the national resources and development system will want to allocate research resources to certain crops, techniques and/or regions which are efficient users of resources when measured from a national perspective.

However, one must recognize that measures of comparative advantage relate specifically to efficiency goals. Pearson and Monke (1987) indicate that the three most common national objectives are:

1. Efficiency - the allocation of resources to effect maximal national output and income:
2. Equity - the distribution of agricultural incomes to preferred income groups or regions; and
3. Food security - the short-run stability of food prices at affordable levels to consumers, reflecting adequacy of food supplies, and the long-term guarantee of adequate human nutrition.

Just the same, however, efficiency measures "can enable decision makers to quantify the cost of pursuing other objectives" (Byerlee and Longmire, 1986).

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### *The Policy Analysis Matrix*

Two related methodologies for analyzing comparative advantage are **The Policy Analysis Matrix (PAM) and Domestic Resources Cost (DRC) Analysis**.

Pioneered by Pearson and Monke (1987), PAM is a product of two accounting identities, one defining profitability as the difference between revenues and cost, and the other measuring the effects of divergences (distorting, policies and market failures as the difference between observed values of the matrix parameters and their values if all divergences were removed. A simplified version of PAM shows private and social profitability, and effect of divergences/efficient policy. An expanded PAM version is shown in Table 1.

This section will provide general discussions and computational procedures of three aspects-private profitability, social profitability and effects of divergences/efficient policy. For details and step-by-step procedures, please refer to the PAM manual of Pearson and Monke (1987).

The first row of PAM reflects private profitability (please refer to Table 1). It incorporates *observed* data on revenues and costs, reflecting actual market prices received or paid by farmers, merchants and processors in the agricultural system. The value development, therefore, provides a measure of private profitability or actual competitiveness of the agricultural system given current technologies, output values, input costs plus the effects of all market failures and policies which create transfer in the system.

The second row refers to valuations that attempt to measure comparative advantage or efficiency in the agricultural production system. Efficient outcomes are achieved when an economy's resources are used in activities that create the highest levels of output and income. Social profitability defined as H is an efficiency measure because outputs, i.e. E, and inputs, i.e. F + G, are measured at prices which reflect scarcity values or social opportunity costs.

If one compares the vertical differences in values of Rows 1 and 2, i.e. comparing private and social values, any net differences can be explained by the effects of a policy and/or existence of market failure. One must realize that "distorting policies are often introduced because key decision-makers are willing to accept some inefficiencies (and consequent slower growth of income) to further non-efficiency objectives" (Pearson and Monke, 1987).

In the PAM, each entry measuring the effects of divergences (i.e. I, J, K, and L of Table 1) is

disaggregated into three categories - effects of market failures, distorting policies and efficient policies. With no market failure, M and N are zero and divergence exists because of distorting policies (and hence I, J, = 0). If domestic factor market imperfections exist along with distorting factor policy, O, S and perhaps W are positive components of K. The net transfer L is then made up of the effects of distorting policy (I, J, and S part of K) but also of the effects of factor market failures (i.e. O part of K) and of efficient policies affecting them (W part of K).

In the absence of market failures affecting product market, all divergence between private and social price of tradable output and import are due to distorting policy. Output and input transfers arise because of commodity specific policies, e.g. taxes and subsidies and exchange rate policy.

### *The Domestic Resource Cost Approach*

Social profit can indicate the efficiency of agricultural systems producing identical outputs. However, when comparing systems producing different outputs for relative efficiency, a ratio is needed to compensate for the problems of dissimilar commodities and technologies.

The DRC ratio can serve as a proxy measure for social profits and is computed as:

$$\text{DRC} = \frac{\text{Return to non-tradable domestic resources in the next best alternative use (valued at world price equivalent)}}{\text{Value added to tradables (valued at world price equivalent)}}$$

where: valued added to tradable = value of tradable outputs - value of tradable inputs

The DRC can be derived from the PAM as follows:

$$\text{DRC} = \frac{G}{E - F}$$

It follows that if H = 0, DRC = 1. Corollary, minimizing DRC implies maximizing social profit. Therefore, in cross-commodity comparisons DRC ratios are indicators of the relative degree of efficiency.

### *Measuring Policy Incentives*

Related to measures of comparative advantage are measures of policy incentives/transfer. As mentioned in previous sections,

divergence between social and private profitability is a measure of policy effects induced by taxes and subsidies, import and exchange rate policies, price policies, and/or market imperfections/failures.

Comparison of policy transfers between systems with different outputs also requires ratios. The nominal protection coefficient (NPC) is a ratio of observed (private) commodity price with a comparable world (social) price. This can indicate the impact of policy (and of market failures not corrected by efficient policy) causing a divergence between the two prices. With the PAM, the following NPC can be derived:

$$1. \text{ NPC for tradable output} = \frac{A}{B}$$

$$2. \text{ NPC for tradable input} = \frac{E}{F}$$

Another measure of incentives is the effective protection coefficient (EPC) which compares the value added in private prices with valued added expressed in world prices, i.e.:

$$\text{EPC} = \frac{A - B}{E - F}$$

This coefficient measures the degree of policy transfer (either incentive or disincentive) created by price policy interventions in the tradable input and output markets.

Pearson and Monke (1987) added that a *Profitability coefficient (PC)* be included as a measure of incentive to take domestic factor transfers. It is computed as:

$$\text{PC} = \frac{A - B - C}{E - F - G} = \frac{D}{H}$$

PC can serve as a proxy for net policy transfer and it measures the incentive effects of all policies.

Finally, a subsidy ratio to producers (SRP) can show the net policy transfer as a proportion of total social revenues or the proportion of revenues in world prices that would be required if a single subsidy or tax will substitute for the entire set of actual commodity and macro policies. It is defined as:

$$\text{SRP} = \frac{L}{E} = \frac{D - H}{E}$$

## Analyzing the Comparative Advantage of CGPRT Crops In the Philippines

This section discusses some general issues in using the comparative advantage approach in analyzing the competitiveness of CGPRT crops in the Philippines.

### CGPRT as Secondary Crops

As previously mentioned, CGPRT crops, except for maize are considered secondary crops in the Philippines. This has some implications not only in terms of the promotion of these crops as part of the coverage of major food production programs of the government but also on policies which are relevant to CGPRT crop-based industries. At best, relevant policies may be found under such general headings as feed crops and oil commodities.

More importantly, this may imply that to a certain extent, the conduct and utility of comparative advantage studies on CGPRT crops rely on this "secondary status." The access to "good quality" database on CGPRT crops is paramount to a sound and adequate analysis and at the same time, the magnitude of the impact results of this analysis will have on the multi-tier policymaking exercises will largely depend on how both data generators and users view the importance of CGPRT crops as a whole.

### Issues on Methods and Procedures

Some issues on comparative advantage analysis of CGPRT crops as these relate to Philippine agriculture will be discussed. However, there may be some important issues which were inadvertently not included. Some issues relevant in studying the competitiveness of CGPRT crops are:

1. Reliance on secondary data - Pearson and Monke (1987) emphasized that time and cost constraints necessitate a heavy reliance on secondary data in constructing farm level budgets. While field work remains critical, this will focus more on verification of secondary data and modifications of input-output ratios to account for technological change. They suggested that good data generated from past farm surveys could be found in the Department of Agriculture or Universities.

For careful comparisons of secondary information, a representative budget should be constructed which must rely on the best source of information for quantity estimates of each particular input and output. Notwithstanding access and quality-related con-

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straints on the data, this specific method of coming up with a representative budget may suffer from one limitation, i.e. input/output estimates may come from various technological/agro-climatic conditions. Pearson and Monke explained that if, for instance, the "best estimate" of fertilizer use comes from high yield estimates and this will be used with average yield data (national or regional), the resulting "representative", budget overestimates fertilizer input relative to output. Profitability in the PAM calculation is correspondingly underestimated.

2. Shadow pricing - Estimating social prices for inputs and outputs represents the most complicated task in doing a PAM. Social prices represent "efficiency" prices and as such do not incorporate non-efficiency objectives, which may at least be as important as efficiency goals. This must be explicit to policymakers or any user of PAM results. But more than just a caveat, it drives home an important point that unless one can accurately identify and quantify non-efficiency objectives and at the same time specify a complete social welfare function, it maybe be best to focus efforts on quantifiable efficiency objectives.

PAM exercises require shadow pricing but how does one go about the process of identifying which input and output need shadow prices, and more importantly how does one assign efficiency prices? These issues are addressed in the PAM manual. But one must also consider that shadow pricing for all the range of items needed by the PAM/DRC will be cumbersome and a lot of judgment, sometimes arbitrary, will be needed in classifying whether one is importable, exportable or non-tradable and whether its status will change, given removal of distorting policies. For CGPRT crops, this will be no easy task especially in the Philippines where systematizing of data bases and information systems are only recent realities. For domestic factors like land, if rental value is not a good estimate - and when land is not for sale (especially in the Philippines where land is considered solid security), what appropriate social valuation applies? Market value of labour as a measure of efficiency price is acceptable given an assumption of full-employment, but this may not be so in most developing countries. Then, sometimes the rural wage is not equal to the marginal value

product of labour especially in some Philippines rural areas where pressure is strong for prosperous farmers to share wealth with less fortunate neighbours. For tradables, the use of the most appropriate foreign exchange rate is crucial. While the Philippines has adopted the floating exchange rate policy, the daily Bankers Association of the Philippines (BAP) rate is usually not equal to Binondo rates (blackmarket rates). The blackmarket rate perhaps reflects the scarcity value of the US dollar. Should one use a foreign exchange premium in which a certain conversion factor is incorporated to adjust for its official exchange rate?

3. Disaggregating costs of inputs - decomposing all input costs into their exact domestic factor and tradable input component is again no easy task. It may become messy as one attempts to break down each item. However, this can be limited to intermediate inputs, e.g. fertilizer and seeds. Transportation and electricity are basically non-tradable but the Philippines is oil-import dependent and local vehicle manufacturing is as yet, a baby industry. So one will be confronted with the problem of which part is imported or locally made, the effect of the Oil Price Stabilization Fund (i.e. tax levied on gasoline and other petroleum product users in the Philippines), import levy (which is roughly 5-9 percent of c.i.f), and foreign exchange adjustment for import components of electricity consumed, among others. There may still be some distorting policies affecting the transport and utilities sectors and these will again impinge in the calculation and decomposition of inputs.
4. Influence of production technique on DRC - Byerlee and Longmire (1986) cautioned that there may not be one unique comparative advantage of a certain crop over the whole country. In the Philippines, several different actual and potential production regions may exist with different technologies, yield potentials, and competing crops. Soybean in the Central Luzon area (which is mostly irrigated and pure agricultural land) is expected to perform better than in the Cagayan Valley region which is not as physically endowed as the former. Hence, DRC ratios will naturally be different between the two regions.

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5. Effect of transportation costs and choice of consumption point, on comparative advantage - In coming up with the relevant social prices for CGPRT crop output, one determines its c.i.f./f.o.b. price and adjusts for relevant marketing and transportation charges. But one must be conscious that DRC ratios will differ, especially if one considers that consumption point is the same as the producing region or where the commodity is consumed near the capital. This is particularly important since physical infrastructure and transport facilities are not really that efficient in the Philippines. Some even say that it is cheaper to import maize from Bangkok for consumption in Manila than to buy and transport maize from Mindanao to the metropolis.

### Summary

The paper attempted to discuss some considerations in using PAM/DRC in analyzing the competitiveness of CGPRT Crops in the Philippines. Some conceptual and methodological aspects of comparative advantage analysis, i.e. its objectives and uses, general procedures for carrying out the PAM/DRC methods, were highlighted. Some issues which may affect comparative advantage analysis like CGPRT secondary status, and specific issues or methods and procedures as these relate to Philippine agriculture were also discussed.

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## CGPRT Centre News and Activities

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### Newly Available Publications from IRRI

#### **Grain Quality**

Rice Grain Marketing and Quality Issues. 1991. 66 p. Rp 4.250

#### **Disease Resistance**

Rice Blast Modeling and Forecasting. 1991. 99 p. Rp 4.250

Crop Loss Assessment in Rice. 1990. 334 p. Rp 10.000

#### **Weeds**

A Handbook for Weed Control in Rice. AmpongNyarko, K and de Datta, S.K. 1991. 113 p. Rp 8.250

#### **Soil and Crop Management for Rice**

Direct Seeded Flooded Rice in the Tropics. 1991. 117 p. Rp 5.000

Phosphorus Requirements for Sustainable Agriculture in Asia and Oceania. 1990. 478 p. Rp 15.000

#### **Environment and its influence**

Climate and Food Security. 1990. 254 p. Rp 13.500

#### **Maps**

Human Geography of Rice in Southeast Asia. 1990. Rp 10.000

#### **Consequences of Rice Technology**

Basic Procedures For Agronomic Research: revised edition. 1991. 230 p. Rp 13.000

#### **Statistical Techniques**

World Rice Statistics 1990. 1991. Rp 11.250

#### **Communication of Information**

Training and Technology Transfer Course' Performance Objectives Manual (TTI-01). 1991. 287 p. Rp 10.000

#### **Others**

**Rice: Then and Now.** 1990. 44 p. Rp 5.000

**Sharing innovation: Global Perspective on Food, Agriculture and Rural Development.** 1990. 265 p. Rp 16.250

#### **World Bibliography of Rice Stem Borers 1794-1990.**

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### CGPRT Centre

The Regional Co-ordination Centre for Research and Development of Coarse Grains, Pulses, Roots and Tuber Crops in the Humid Tropics of Asia and the Pacific (CGPRT Centre) was established in 1981 as a subsidiary body of UN/ESCAP.

### Objectives

In co-operation with ESCAP member countries, the Centre will initiate and promote research, training and dissemination of information on socio-economic and related aspects of CGPRT crops in Asia and the Pacific. In its activities, the Centre aims to serve the needs of institutions concerned with planning, research, extension and development in relation to CGPRT crop production, marketing and use.

### Programmes

In pursuit of its objectives, the Centre has three programmes which are mutually supportive:

1. Research, which entails the preparation and implementation of studies covering production, utilization and trade of CGPRT crops in the countries of Asia and the South Pacific;
2. Training of national research and extension workers;
3. Information and documentation which encompasses the collection, processing and dissemination of relevant information for use by researchers, policy makers, and extension workers.

### Palawija News

Contributors are invited to submit concise summaries of significant social research related to CGPRT crops for publication. Submissions should be limited to two to four double-spaced typewritten text. Two figures (graphs or tables) may accompany the article. Include only references cited. All articles are subject to editing to meet space limitations.

Please send all queries relating to articles in *Palawija News* to Head Publications Section, CGPRT Centre, Jalan Merdeka 145, Bogor 16111, Indonesia.

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