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## **Productivity Impacts of Agrarian Reform in the Philippines Over Time: A Review of Several Studies**

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### **ABSTRACT**

*Earlier land reform initiatives and Operation Land Transfer (OLT) covering rice and corn lands in 1972 was expanded in 1987 to cover all crops pursuant to the Comprehensive Agrarian Reform Law (CARL). Studies on land reform and productivity have varied findings on the impact of the program on productivity. Most of the earlier pre-CARP studies were positive, neutral and suggestive of the necessity for institutional support services.. This was confirmed by the studies conducted during program implementation.*

### **INTRODUCTION**

Agrarian reform in the Philippines evolved from being merely redistributive land reform to one that is complemented by support services for increased productivity and economic well-being of beneficiaries. From earlier land reform initiatives and Operation Land Transfer (OLT) covering rice and corn lands in 1972, it was expanded in 1987 to cover all crops pursuant to the Comprehensive Agrarian Reform Law (CARL).

This paper reviews the impacts of land and agrarian reform programs in the Philippines to agricultural productivity based on several studies conducted over time.

#### **Land reform, OLT, land size and productivity**

Studies on land reform and productivity have varied findings on the productivity effects of the program.

In a study on cross-regional total factor productivity (TFP) of rice and corn and effect of the Operation Land Transfer (OLT) in the Philippines, Limbo (1997) reviewed the related literature on land reform, land size and productivity.

Ruttan (1964) expressed the view that land reform by itself does not directly affect the growth of agricultural output. Changes in agricultural output are derived from changes in inputs and changes in the efficiency of output linkages. Hence, the policy instruments and constraints must be evaluated in terms of the effectiveness with which they facilitate such changes.

Berry and Cline (1979) conducted intensive hypotheses tests on the influence of agrarian structure on agricultural productivity and employment for selected developing countries such as Brazil, Colombia, Philippines, Pakistan, India and Malaysia. The study examined the differences among countries in their scope for increasing agricultural production and employment through programs focused upon small farm development. The study concluded that small farms exhibit higher land productivity and total social factor productivity.

The same study indicated that there is no aggregate evidence on relative factor productivity by farm size from 1960s to early 1970s. This suggests that new varieties introduced in the 1970s brought no lasting changes in the usual relationship between yield and farm size of rice. This implies that other factors might have affected the productivity of rice and corn during the study period. In relation to Ruttan's (1963) assertion, Berry and Cline (1979) suggest that for rice and corn, the growth in past output was not due to land reform alone but to a host of other factors.

The Department of Agrarian Reform (DAR) conducted a study in 1983 on the process and impacts of OLT, considering the period the program had been implemented (1972-1981). Using a sample of one (1) percent of the OLT beneficiaries in 1982, the study explored, among other factors, the changes in tenurial status of rice and corn farmers in OLT areas. Some insights on the productivity aspects were generated. For instance, a favorable change in cropping pattern from corn to rice, and an increase in the cropping index for rice and a decrease for corn were observed. The cropping index for rice increased from 106.5% to 124.2% of the area, while for corn, it declined from 34.4% to 29.6% percent. Increases in rice output and decreases in corn output per hectare were generally observed in OLT areas, but showed no clear trend among the various types of farmer beneficiaries for the given period.

Sandoval (1983) reviewed studies relating farm size and land reform to farm productivity. Studies showed both neutral and positive effects on farm productivity (Table 1). Harkin (1976) qualified his neutral position stating that OLT would have no effect without the provision of institutional services such as credit and extension. In the same vein, Sodusta (1977) indicated that productivity increases were due to intensive input usage. Sandoval himself observed that there had been no time series studies that

carefully isolated the effect of OLT from technological change in determining the growth of farm productivity (Mangahas, 1985).

Mangahas (1985) expressed the view that agricultural productivity is unaffected by farm tenure structure, reiterating his earlier position that land reform would not have any significant effect on yield. This was based on surveys of different tenure groups in Nueva Ecija, one of Central Luzon's provinces. The survey results showed no significant differences, cross sectionally among the different tenure groups, in terms of productivity or agronomic modernization. In addition, it was pointed out that neither did there appear to be any tenure-related differences in productivity in other studies then available.

Using a comparative analysis of five rice-dependent Philippine villages, Otsuka (1987), studied the relationship between technical change and land reform implementation. The study found that the success of land reform for the Philippine rice sector was linked to technical change represented by the adoption of modern seed and fertilizer technology. However, the substantial income redistribution from landlords to tenants occurred only in areas where yield grew significantly since land reform was implemented. It was inferred that, if technical change were absent, the distributional impact of land reform would not be as broad. In short, technical change was a major contributory factor to the perceived early successes of land reform.

Table 1. Findings on Effects of Operation Land Transfer (OLT) on Farm Productivity

<b>Authors</b>	<b>Year</b>	<b>Findings</b>
Sandoval and Gaon	1972	No effect
Zarsa	1974	Positive
Nicolas	1974	Positive
Harkin	1976	No change without institutional services
Mangahas, Miralao and de los Reyes	1976	Neutral
Sodusta	1977	Neutral
Angsico	1978	Positive
San Andres and Illo	1978	Positive

Note: Based on review by Sandoval (1983), Economic Aspects of Agrarian Reform: Lessons from Experience

In the same study by Limbo (1997) using 1991 data, regional indices of total factor productivity (TFP) were assumed to have a functional relationship with OLT and other explanatory variables which are important factors influencing productivity levels. The nature and extent of technologies in different regions, as reflected in the TFP indices, were affected by

exogenous variables which are important determinants of productivity. Regression analysis was employed. From the results, it could be inferred that OLT had a positive overall effect upon rice and corn aggregate TFP. However, at the individual crop level, the results were positive for rice but insignificant for corn. This was attributed to the fact that most of OLT land distribution and the corresponding support services were extended to rice regions, which had larger shares in terms of OLT scope.

### **Productivity assessment for the CARP**

Habito *et al.* (2003) in their study for DAR and FAO on the investment, land markets and productivity impacts of the Comprehensive Agrarian Reform Program (CARP) revealed that aggregate data provide evidence of productivity improvement in agriculture in the post-CARL period, in terms of land productivity, labor productivity and total factor productivity (TFP). However, such trend could not be attributed to CARP without further analysis. The wider economic policy environment marked by increased competition and liberalization was cited to be the factors that must have contributed to productivity improvements in the 1990s.

According to the report, survey data used for the study, both from rapid appraisal of traditional landowners and the survey of new landowner-beneficiaries, failed to attribute any significant change in productivity to CARP except for the improvement in the labor productivity for 1990 of rice farmers who were ARBs. The surveys were not able to provide evidence that CARP had led to changes in farmers'/landowners' behaviour with respect to technological improvement, land use and cropping patterns, or diversification strategies.

The study also found out based on aggregate data, there were no obvious changes in area planted to alternative crops as response to CARP, except for a clear decline in area planted to corn, and significant increase in area planted to bananas. Aggregate land productivity significantly increased after commencement of the CARP. This result as well as the observed improvement in TFP in agriculture in the 1990s could not be readily attributed to the program but was considered to be consistent with what would be expected from more extensive land use that CARP sought to provide.

It was clarified that the inability to attribute productivity changes to CARP from the data used in the study was not surprising due to the persistent inadequacies in public expenditures for agriculture.

This can be supported by the fact that funds allotted for the extension and other support programs of Department of Agriculture (DA) for CARP beneficiaries were only up to 1992. According to the Presidential Agrarian Reform Council (PARC) Secretariat, with the enactment of the Local Government Code of 1991, which devolved the DA's functions to the Local Government Units (LGUs), it ceased to be one of the CARP Implementing Agencies (CIAs).

Gordoncillo *et al.* (2009) in their assessment of CARP and its impact on rural communities made a comparison of 1990, 2000 and 2006 levels and Agrarian Reform Beneficiaries (ARBs) vs. non-ARBs, the authors noted a pattern of productivity changes reflected for the non-ARB respondents. The level of rice productivity was slightly higher among non-ARBs compared to the ARBs because more ARB respondents were using traditional rice varieties.

The same study further noted that for corn and coconut, the level of productivity among ARB respondents was lower compared to the non-ARBs in both the 1990 and 2000 survey periods. This was attributed to higher cropping intensity among the non-ARB respondents than for ARBs.

In terms of farm productivity, the study noted that increases in rice and coconut yield were lower for the ARB than the non-ARB during the 2000-2006 period. Despite the minimal expansion in effective corn area, the yield change was significantly higher for the ARB. On the other hand rice yield posted a lower yield for the ARB over the non-ARB during this period-

The University of the Philippines Los Baños Foundation Inc. (UPLBFI) conducted an Impact Assessment study in 2009 for the DAR-World Bank Second Agrarian Reform Communities Development Project (ARCDP2). The study focused on assessing whether ARCDP2 was successful in meeting its project goals of increasing productivity, household income, business assets and cropping intensity. Primary and secondary data were gathered from household surveys, case studies, key informant interviews, focused group discussions, before and after and with and without project analysis. The study team found out that the enhancement in net on-farm income was due to increased farm productivity. There was observed general uptrend in the productivity of rice and corn lands after ARCDP2 implementation.

Table 2 presents a comparison of productivity levels of ARCDP2 covered Agrarian Reform Communities (ARCs) before and after the project. Yield of hybrid rice increased from 3.62 metric tons per hectare (mt/ha) to 4.71 mt/ha or 30 % after the project. For traditional/upland rice, increase was 34 % while a decrease of 3 % was observed for HYV rice. The highest increase was for traditional/white corn with 131 % positive change after the project.

Table 2. Productivity Levels Before and After ARCDP 2

Crops	Productivity levels (mt/ha)		Percent (%) Change
	Before	After	
Hybrid rice	3.62	4.71	30
Traditional/upland rice	1.72	2.31	34
High Yielding Variety (HYV) rice	3.46	3.36	(3)
Corn	2.12	2.95	39
Traditional/white corn	0.83	1.90	131
HYV/Yellow corn	3.77	4.03	5

#### Factors affecting productivity changes

The UPLBFI study found that material inputs especially pesticides affected the production level for rice while seed inputs had mattered for corn farmers. However, it was further observed that irrigation had more effect on the changes in production levels than material inputs. Irrigation was one of the projects provided by ARCDP2. Credit was also found to have significant positive effect on the change in production for rice and corn farmers.

Provision of tenure instrument under land and agrarian reform was considered to have significant effect on changes in production levels for all three crops. However, conflict in tenure has led to lower changes in production levels for corn and rice farmers.

It was further noted that ARBs exposed to infrastructure developments have higher changes in rice production than non-ARBs.

## **Policy implications and recommendations**

The DAR-FAO CARP Assessment Study by Habito *et al.* (2003) recommended several measures to enhance the benefits from CARP. The following measures need to be continuously pursued to further improve productivity in the awarded lands in order to significantly contribute to overall agricultural productivity:

1. Reorientation of public agriculture research & development (R&D) expenditures towards corn and non- traditional high value crops;
2. Channeling development resources of national government departments through the local government units (LGUs);
3. Promotion and facilitation of contract growing arrangements for ARBs;
4. Strengthening support systems for ARBs; and
5. Instituting of a progressive agricultural land tax to encourage productive use of all agricultural lands.

## **CONCLUSION**

There were differences in the findings of reviewed studies conducted over time. The productivity effects of land reform reported by the earlier pre-CARP studies were not predominantly positive. Some were neutral and suggesting that institutional support services be given to the land beneficiaries. These services were provided later in the expanded agrarian reform program or CARP. Assessment studies for specific project areas revealed positive changes in productivity of rice and corn after project implementation. However, the comparison of different periods from a more general set of ARBs and non-ARBs were not able to show significant changes attributable to CARP. The lack of sustainability and integration in general support services provision was a reason for this. There is a need to conduct more focused studies and inquiries to further evaluate impacts of the program, but the need to address the inadequacies in public expenditures for agriculture and support services provision including those recommended in the conducted studies can be considered as more urgent.

## **REFERENCES**

- Berry, R.A. and W.R. Cline (1979), *Agrarian Structure and Productivity in Developing Countries*, The Johns Hopkins University Press, Baltimore and London.
- DAR and FAO-TSARRD (1983), *The OLT Program of the Philippines: Process and Impact*. Department of Agrarian Reform and Food and Agriculture Organization-Technical Support for Agrarian Reform and Rural Development, Quezon City, Philippines.
- Evenson, R.E. (1988), *Research, Extension and U.S. Agricultural Productivity: A Statistical Decomposition Analysis*, In: *Agricultural Productivity Measurement and Explanation*, Capalbo S. and J.M. Antle (eds), Resources for the Future, Washington, D.C.
- Gordoncillo, P.U., M.M. Paunlagui, E.S. Solivas and T.P. Laude (2009), *An Assessment of the Comprehensive Agrarian Reform Program and Its Impact On Rural Communities II: Micro Perspective*, DAR, CEM-UPLB, CPA-UPLB, UPLBFI, Los Baños, Laguna, Philippines.

- Habito, C.F., R.M. Briones and E.S. Paterno (2003), Investment, Productivity and Land Market Impacts of the Comprehensive Agrarian Reform Program (CARP), DAR, FAO. Quezon City, Philippines.
- Limbo, R.C. (1997), Cross-regional Productivity Differences and the Effect of a Government Program: The Case of Rice and Corn and the Operation Land Transfer, Master's Dissertation, University of New England, Armidale, Australia.
- Mangahas, M. (1985), Rural Poverty and OLT, In: Strategies for Alleviating Poverty in Rural Asia. I. Rizwanul (ed), International Labor Organization (ILO), Geneva, Switzerland.
- PARC Secretariat (2009), Comprehensive Agrarian Reform Program at 20, A Performance Report, Presidential Agrarian Reform Council Secretariat. Quezon City.
- Ruttan, V.W. (1964), Equity and Productivity Objectives in Agrarian Reform Legislation: Perspectives on the New Philippine Land Reform Code IRRI Journal Series No. 2r, International Rice Research Institute, Los Baños, Laguna, Philippines.
- Sandoval, P.R. (1983), Economic Aspects of Agrarian Reform: Lessons from Experience, In: The Agrarian Reform Program: A Decade After P.D. 2 and 27, Agrarian Reform Institute Advisory Council Technical Committee, Los Baños, Laguna, Philippines.
- University of the Philippines Los Baños Foundation Inc, (2009), Second Agrarian Reform Communities Development Project (ARCDP2) Impact Assessment Study, Volume 1: Integrative Report, Los Baños, Laguna, Philippines.

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