

# THE EFFECT OF RESEARCH ON RICE PRODUCTION IN PHILIPPINE

**Baljinder Singh<sup>1</sup>, Gurdeep Singh<sup>2</sup>**

<sup>1,2</sup>Guru Kashi University, Talwandi Sabo

## **ABSTRACT**

*Research and development have a significant impact on rice production in the Philippines. Rice creation development in the Philippines from 1996 to 2007 was analyzed utilizing a summed up instrumental variable assessor and a translog creation work assessment. A creation system was utilized to look at how traditional and non-ordinary contributions, alongside lingering all out factor efficiency, added to the expansion in by and large creation volume. Between 2001-2006 and 2002-2007, yield developed seriously during the stormy and dry seasons, contrasted with 1996-2001 and 1997-2002, when result expanded less. Utilizing water system, cross breed and third era present day innate assortments, rice creation instructional meetings, excellent seed, and machine proprietorship were viewed as the most important non-traditional inputs in these periods, according to the findings.*

**KEYWORDS:** *rice production, Philippine, Developments*

## **INTRODUCTION**

Rice is likewise the most generally developed crop in the nation, representing around 30% of the nation's absolute horticultural land (Dawe 2003). The greater part of the pay in 2,000,000 families comes from rice cultivating. Numerous landless homestead laborers and great many vendors are likewise straightforwardly reliant upon rice for their occupation. Rice has generally been the essential focal point of the public authority's food security approaches on account of its social and monetary significance.

A 44 percent increment in harvestable land was everything that was required for rice creation in the Philippines to significantly increase from 5 million tons in 1970 to 16 million tons in 2008. In a similar time-frame, the yield per hectare was multiplied with the assistance of the Green Revolution's seed-compost innovation and water system framework. As the

total populace keeps on rising, so does the per capita rice utilization. Rice imports were utilized to fill the hole among request and supply and balance out the homegrown cost of rice, aside from a couple of years in the last part of the 1970s and mid 1980s.

Since the 1990s, the Philippines has progressively depended on rice imports, however its mission for rice independence endures. To accomplish rice independence or not is a subject of discussion among academicians, researchers, financial specialists and lawmakers. It has been proposed that the Philippines' absence of similar benefit in rice creation is because of the country's topographical area... (Dawe 2006). At the end of the day, due to contending requests on restricted public assets, the fundamental public ventures to accomplish rice independence are considered restrictively costly. Some, then again, contend that the little worldwide rice market legitimizes more noteworthy independence. Since a large portion of the world's rice is consumed in the nations where it is developed, variances in the utilization and creation elements of major delivering nations can essentially affect worldwide rice supplies. Subsequently, it is desirable over purchase rice from neighborhood ranchers to stay away from cost and supply variances in the worldwide market. Whenever the cost of grains shot up in 2008, the Philippine government executed an open-delicate approach to forestall a rice lack, while some rice sending out nations prohibited their own commodities. This shows the political significance of rice independence.

### **Overview of Rice Production in the Philippines**

From 1970 to 2007, rice production grew at an exponential rate in terms of both region collected and yield. From 1970 to 1990, rice creation was generally determined by expansions in yield. Ingrained MVs, enormous scope water system frameworks, data crusades, and financed credit were referred to by Barker (1984) and Panganiban (2000) as explanations behind the expansion in yield. A decrease on the planet rice cost, stale public water system speculation, fatigue of MV usefulness potential, and soil corruption 15 brought about by increased editing frameworks generally added to a log jam in yield development somewhere in the range of 1990 and 2000. (Hayami and Kikuchi 1999; Mundlak, Larson, and Butzer 2002). There could be presently not a job for growing farmland by developing new regions during the 1990s. Crop escalation in watered regions and the advancement of public and private limited scope water system frameworks resulted in an increase in harvestable area (Llanto 2003). As industrial and residential uses of land increase, the Philippines may be forced to increase

rice production on the same amount of land in the future. Rice production grew at the same rate as during the height of the Green Revolution in the 1970s. Almost 80 percent of the increase in output was due to an increase in yield. The annual increase in irrigated and rainfed yields was offset by a decrease in harvested area. In spite of the fact that yield trends showed a shift in productivity, they did not adequately explain what was really driving that change. Seed, fertiliser, labour, and machinery use can all increase yield, making it difficult to pinpoint where productivity gains could be coming from. It was possible to separate the contribution of TFP growth from input growth thanks to the existence of the production function.

### **Developments in Rice R&D in the Philippines**

The Philippine government's interest in rice R&D is one of its most significant strategies for accomplishing its objective of rice security. There are three particular periods in the Philippines' rice innovative work history, as indicated by Flores-Moya, Evenson, and Hayami (1978). Research and development before World War II depended on crafted by researchers at the Bureau of Plant Industry and the University of Philippines College of Agriculture (the present UP Los Baos) who directed unstructured analyses. From 1955 to 1960, the Rice and Corn Research and Production Program was sent off with the foundation of the Rice and Corn Production Coordinating Council, guaranteeing monetary help for rice research. This period was described by rice rearing exploration in light of the determination of unadulterated lines. Worldwide Rice Research Institute (IRRI) was laid out in the third period, making it the most established and biggest horticultural exploration organization in the Asia-Pacific area (IRRI 2007). Consultative Group on International Agricultural Research (CGIR) research centres looked up to IRRI as a model (CGIAR). First modern rice variety (MV) IR8 was released in 1966, launching the Green Revolution for tropical rice production. 2 The Philippine Seed Board (PSB), later renamed the National Seed Industry Council (NSIC), has released 47 rice varieties bred by IRRI since 1990. (NSIC). There are 29 irrigated lowlands varieties, 4 rainfed lowlands varieties, 5 cool elevated lands varieties, 6 saline-prone lowlands varieties, and 3 upland varieties in this group of varieties. Hybrid cultivars make up four of the irrigated lowland varieties. About ninety percent of the Philippines' rice crop is inbred MV, a practise that began in the 1990s.

### **Review of Rice R&D Impacts in the Philippines**

In part, IRRI's accountability to its donors has necessitated a significant amount of research on R&D's impacts in the Philippines. An overview of the impact assessment of Philippine rice research was provided by Pingali (2001). The first studies focused on the adoption of modern inbred rice varieties and other crops and their effects at the farm level (Dalrymple 1977,1978). These observations demonstrated the early effects of the Green Revolution empirically. For inbred rice MVs, Herdt and Capule (1983) gave data on worldwide, territorial, and public reception rates. Ingrained rice MVs were likewise considered in positive and troublesome creation conditions for their reception rates. For the latest expansion to these investigations, Gonzales and partners (2007) led a midterm sway evaluation of the half breed rice commercialization program, which analyzed the benefit of mixture rice cultivating in contrast with ingrained rice creation.

## **CONCLUSION**

Rice is a staple in Filipino households and a crucial part of the average Filipino's diet. Rice self-sufficiency, however, is not the same as food security in my opinion. Household food security cannot be addressed solely through rice policies. Nonetheless, a sufficient supply of rice to meet the rising demand of a growing population necessitates increasing rice productivity. Small rice farmers and landless farm workers could benefit from increased productivity, which could help alleviate poverty in rural areas. It is also critical to help domestic producers become more cost-competitive with their international counterparts by increasing productivity. For this reason, a liberalisation of the Philippines rice trade could be a catalyst for making the supply available at a reasonable price to consumers.

## **REFERENCES**

1. Alston, J.M., C. Chan-Kang, , M.C. Marra, P.G. Pardey, and T.J. Wyatt. A meta analysis of rates of return to agricultural R&D. *Ex Pede Herculem?* Washington DC: International Food Policy Research Institute, 2000.
2. Alston, J.M., G.W. Norton, and P.G. Pardey. *Science under scarcity: Principles and practice of agricultural research evaluation and priority setting.* New York and The Hague, Netherlands: CAB International and International Service for National Agricultural Research, 1998.

3. Alston, J.M., M.C. Marra, P.G. Pardey, and T.J. Wyatt. "Research returns redux: A metaanalysis of the returns to agricultural R&D." *The Australian Journal of Agricultural Science*, 2000: 185-215.
4. ARF. The Asia Rice Foundation. 2006. <http://www.asiarice.org/sections/learnrice/issa.html> (accessed June 1, 2009).
5. Barker, R. The Philippine rice program - Lessons for agricultural development. International Agriculture Mimeograph No. 104, Ithaca: Cornell University, 1984. BAS. Bureau of Agricultural Statistics. 2008. <http://countrystat.bas.gov.ph> (accessed January 30, 2010).
6. Blackorby, C., and R. Russell. "Will the real elasticity of substitution please stand up? (A comparison of the Allen/Uzawa and Morishima elasticities)." *The American Economic Review*, 1989: 882-888.
7. Cassman, K.G., and P.L. Pingali. "Extrapolating trends from long-term experiments to farmers fields: the case of irrigated rice systems in Asia." In *Agricultural sustainability: Economic environmental and statistical considerations*, by V. Barnett, R. Paynes and R. Steiner, 63-84. London: Wiley, 1995.
8. Cheyglinted, S., S.L. Ranamukhaarchchi, and G. Singh. "Assessment of the CERES-Rice model for rice production in the Central Plain of Thailand." *Journal of Agricultural Science*, 2001: 289-298.
9. Christensen, L., and W. Greene. "Economies of scale in US electric power generation." *The Journal of Political Economy*, 1976: 655-676. 129
10. Christensen, L., D. Jorgenson, and L. Lau. "Transcendental logarithmic production frontiers." *Review of Economics and Statistics*, 1973: 28-45.
11. Contado, T. Decentralization and agriculture service delivery - benchmarks, transfers and capacity building in intergovernmental relations in Indonesia, Vietnam, the Philippines. Country Report Philippines, Rome: United Nation - Food and Agriculture Organization, 2004.
12. Cororaton, C.B., and E.L. Corong. Philippine agriculture and food policies: Implications for poverty and income distribution. Research Report 161, Washington DC: International Food Policy Research Institute, 2009.
13. Corton, T.M., et al. "Methane emission from irrigated and intensely managed rice fields in Central Luzon Philippines." *Nutrient Cycling in Agroecosystems*, 2000: 37-53.

14. Dalrymple, D.G. Development and spread of high yielding varieties of wheat and rice in the less developed nations. USDA Foreign Agricultural Economics Report No.95, Washington DC: United States Department of Agriculture, 1978.
15. Dalrymple, D.G. "Evaluating the impact of international research on wheat and rice production in the developing nations." In Resource allocation and productivity in national and international agricultural research, by T.M. Arndt, D.G.
16. Dalrymple and V.W. Ruttan, 171-208. Minneapolis: University of Minnesota, 1977.
17. David, C. Averting the water crisis in Philippine agriculture: Policy and program framework for irrigation development in the Philippines. Quezon City: The University of the Philippines Press and Asia Pacific Center, 2003.
18. David, C. Fertilizer demand in the Asian rice economy. XV(1), Food Research Institute Studies, 1976.
19. David, C. The Philippine hybrid rice program: A case of redesign and scaling down. Research Paper 2006-03, Makati: Philippine Institute of Development Studies, 2006.
20. David, C., and A. Balisacan. Philippine rice supply and demand: Prospects and policy implications. Discussion Paper Series No.95-28, Makati: Philippine Institute of Development Studies, 1995.
21. David, C., and K. Otsuka. Modern rice and technology and income distribution in Asia. Boulder: Lynne Rienner, 1994.