

Impact of External Costs and Benefits of Paddy Farming in Sri Lanka

¹Nishantha BMN, ²Semasinghe WM, ³[REDACTED], ⁴Gunarathna KMLMM

^{1,2,3,4} Senior Lecturer, Department of Economics, [REDACTED]

Abstract: The objective of this paper is to conduct a comprehensive analysis of costs and benefits of paddy production with special reference in externalities. As negative effects, human health problem and human and animal poisoning and as positive social effect flood mitigation, recharge groundwater, purification of water and increasing highland crop(s) yields are evaluated in this study. According to the analysis, considering direct costs and benefits, it is concluded that Paddy farming in Sri Lanka is a profitable farming industry. The total external benefit (TEB) was higher than the total external cost (TEC) in any scheme. In terms of that total social benefits (TSB) was also higher than the total social cost (TSC) in any scheme. These results suggested that the paddy farming process in Sri Lanka released benefits to the society than costs. Therefore, it is indicated that the social required quantity is higher than the current equilibrium quantity. Further, it is concluded that major irrigated paddy farming has plenty of opportunities to implement new projects in order to maximize the benefits of paddy farming.

Keywords: costs benefits analysis, externalities, paddy production, social benefits, social cost.

I. INTRODUCTION

Sri Lanka's rice sector alone contributes 10.8 per cent to the agricultural GDP which accounts for 1.6 Percentage of GDP in the year 2013 (CBSL, 2014). The value of annual rice production is approximately 4.62 million metric tons at present which is at an increasing trend (CBSL, 2014). There are 879,000 farm families which comprise 20 Percentage of the total population. Thirty two Percentage of the total labor force is directly engaged in the rice sector (DOASL, 2008). Sri Lanka has 730,000 ha of prepared lands suitable for paddy cultivation at present. Out of this on the average of 560,000 ha are being cultivated during Maha¹ season which represents for a seasonal cropping intensity of 76.7 and 310.000 ha in Yala season that equals to seasonal cropping intensity of 42.4 per cent. During the Maha Season, 752,442 acres under major irrigation, 393,293 acres under minor irrigation and 443,908 acres under rain fed and during the Yala season 465824 acres under major irrigation, 182,354 acres under minor irrigation and 186,065 acres under rain fed, are cultivated and harvested in the year 2009 (DCSSL, 2012).

With the development of paddy cultivation sector in Sri Lanka, the use of chemicals, machinery and improved seeds have been increased since the farmers are mainly concerned about the private costs and benefits that they have to incur to achieve desirable outputs and least concerned about the undesirable byproducts of their production processes (Nishantha, 2014). According to Herath (1984), salinity level of Mahaveli H area in Sri Lanka, greater than 4.5 mmhos/cm and rise yields could thus be affected. Further, there was a 10 Percentage reduction in rice yield in this area than in non-salinity area. Bandara and Coxhead (1999) reveal that up and mid country agricultural land erodes at an average rate of 14.5 tons per hectare per year in Sri Lanka. Central Bank of Sri Lanka (CBSL) (2011) figured out that the fertilizer issues in paddy sector have been increasing rapidly. According to the CBSL (2004), in the year of 2000, the total of fertilizer issues in paddy sector was 262,362 Kg which number has approximately doubled within 9 years. In the year of 2009, total of fertilizer issue in paddy sector was 422,968 Kg. According to FAO (1998) Sri Lanka ranks very high in the Asia Pacific Region with regard to pesticide related health hazards and annually, the total number of pesticide accidents in Sri Lanka is around 20,000.

¹ There are two main paddy cultivating seasons in Sri Lanka known as Yala and Maha