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MEDIA BRIEFER: Small scale banana growers stand to profit more without aerial spraying, according to study

An unpublished study, commissioned by the Interface Development Interventions, has found out that a shift to manual spraying of pesticides in banana plantations can offer more economic benefits for the average banana contractual grower.

The downside to this is that banana companies will shoulder the operational costs of the shift, although the study did not say that the financial implications of the shift will be cost-intensive for these corporations.

The study, *A Financial Assessment on Shifting from Aerial to Ground Spray in Banana Plantations in Davao Region***,** was conducted in 2011 by freelance Manila researcher Anabeth San Gregorio. It sought to review the contention of banana industry stakeholders that a shift to ground spraying would be financially disastrous for the million -dollar Filipino banana industry.

Local environmentalists have long been lobbying against aerial spraying because of the various health and environmental risks that the pesticide drift brings. However, banana companies prefer this method because according to them, it is the most cost-efficient way to wipe out the black sigatoka fungus from the banana groves.

Aerial spraying is the application of fungicide via a low flying airplane. Since 1970, this has been used by banana companies because of its uniform and apparent efficient coverage in terms of area per unit of time. Aerial spraying costs become part of the operational expenses incurred in running these big plantation farms.

But this changed in the 90s, when "contract growing" began to be popular. In the Philippine banana industry, this refers to the agreement of a grower (usually a small farmer with land of 2 hectares or less) with an export company to supply the harvest, which is packed under the exporter's brand. Under this agreement, farmers maintain ownership of their individual farms but also assume all responsibilities in farm management and harvest.

In this agreement, farmers permit the company to carry out aerial Sigatoka control activities which are then charged to the farmer's account and expense at cost. The burden of paying for the added cost of aerial spraying is then assumed by the farmer.

Key Findings

The study found out that this practice often results in the small farmer having a "negative net income". Because of the high costs of aerial spraying, the farmers profits are wiped out by the charges that they have incurred for the use of the aerial spraying method.

Table 21. Comparison of Cost and Returns for Aerial vs. Ground Spray in Small Banana Farmss

	Aerial Spray	Ground Spray
Yield (per ha/yr)	4000 boxes	
Costs (per ha/yr)		
Sigatoka Control Cost	73,800	53,600
Other Production Costs	170,000	170,000
Indirect Costs	45,000	43,000
Total Cost	*288,800*	*266,600*
Cost per Box (in peso)	*72.20*	*66.65*
Cost per Box (in US$)	*1.57*	*1.45*
Gross Value of Produce (per ha/yr)		
Ex-patio price (per box)	$ 2.20	$ 2.20
Gross Value of Yield (in peso)	*404,800*	*404,800*
Potential Gross Profit *(in peso, per ha/yr)*	***116,000***	***138,200***
Net Returns (per unit, in US$)		
Net Returns per Box	0.63	0.75
Net Returns per kg	0.05	0.06

However, if the situation were reversed and a shift to ground spraying will be implemented, the study found out that it would result to an "increase in potential gross profit from PhP 116,000 to PhP 138,200/ha/yr or an incremental profit of PhP22,200. In terms of net returns per box, this means a 12cent increase, from 63 to 75cents with the shift. The net returns is well within the world average especially in the case of ground spraying at 75cents."

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The study also further notes that "the cost for small farm is only about PhP53,600/ha/yr, compared to the PhP73,800/ha/yr they are paying for aerial spraying. The shift can translate to a saving of PhP20,200/ha/yr."

Table 20. Comparison of Cost and Returns for Aerial vs. Ground Spray in Large Banana Plantations

	Aerial Spray	Ground Spray
Yield (per ha/yr)	4000 boxes	
Costs (per ha/yr)		
Sigatoka Control Cost	68,600	97,300
Other Production Costs	170,000	170,000
Indirect Costs	72,556	72,556
Total Cost	*311,156*	*339,856*
Cost per Box (in peso)	77.79	84.96
Cost per Box (in US$)	1.69	1.85
Gross Value of Produce (per ha/yr)		
FOB Price (per box)	$ 2.35	$ 2.35
Gross Value of Yield (in peso)	*432,400*	*432,400*
Potential Gross Profit *(in peso, per ha/yr)*	***121,244***	***92,544***
Potential Net Returns (per unit, in US$)		
Net Returns per Box	0.66	0.50
Net Returns per kg	0.05	0.04

But for plantation companies, the shift will "impose an additional PhP28,700/ha/yr. That is from an average of PhP68,600/ha/yr for aerial spray, it will increase to PhP97,300/ha/yr with the use of ground spray." But according to the study, this is not entirely as bad as it sounds because while adoption of manual spraying will equate to a "a loss of PhP28,700/ha/yr potential gross profit (or a loss of 15 cents for every box of banana), banana corporations would still be earning a positive potential net return and almost within the world average at 4 cents per kg."

Overall, the study found out that " whether it is the large plantation or small grower farm, the proposed shift from aerial to ground spray is still feasible gauging on the positive net returns".

Conclusions

Like any technological change, it is true that shifting to ground spraying is not without cost. But results showed that overall, holding all other things constant in the market scenario for banana, even with the ban, and shift to ground spray, the industry can survive the change. Based on the computations made, potential net returns to the industry would still be positive implying that it would still be a viable industry

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Table 22. Summary of the Key Results Comparing Aerial with Ground Spray

	Aerial Spray		Ground Spray	
	Plantation	Small Farm	Plantation	Small Farm
Cost and Returns (per ha/yr, in peso)				
Sigatoka Control Cost	68,600	73,800	97,300	53,600
Gross Value of Yield	432,400	404,800	432,400	404,800
Potential Gross Profit	121,244	116,000	92,544	138,200
Net Returns (per unit, in US$)				
Net Returns per Box	0.66	0.63	0.50	0.75
Net Returns per kg	0.05	0.05	0.04	0.06

Another way to look at the loss in potential profit is the resulting to gain to society. That by shifting to ground spray, this would mean internalizing the cost of the "externalities" caused by banana production. As defined in the study, externality "happens when the activities in the process of producing and/or packaging banana create and impose a negative impact on other people but which is not accounted for in the market price of banana" . This in turn may enable the banana companies to recoup their losses by pricing the banana closer to its true price. This is not farfetched especially since most of the importing countries of Philippine banana are from developed countries. Given the increasing social and enviromental awareness of consumers from these countries, they should be made aware that it is only fair that the price they pay for banana not only reflect the direct cost from production but also the indirect cost brought about by the externalities the production generates. (#)

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