The Informatization of Agriculture

Article *in* Asian Journal of Communication · January 1993

DOI: 10.1080/01292989309359584

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THE INFORMATIZATION OF AGRICULTURE

Alexander G. Flor

> *From 1983 to 1986, I did a study on the Digital Divide titled, the* ***Information Rich and the Information Poor: Two Faces of the Information Age in a Developing Country****. In 1989, as Research Fellow at the East West Center Institute of Culture and Communication in Honolulu, I wrote the article* ***The Informatization of Agriculture*** *along the same theme****.*** *In 1993, It was subsequently published in* ***The Asian Journal of Communication****, Volume II, Number 4.*

The Agricultural Age has brought about the agriculturization of the planet. The Industrial Age has caused among other things the industrialization of agriculture. The Information Age has resulted to the informatization of the agricultural industry.

Who profits from agricultural aid? Who benefits from so-called rural development programs? Do agricultural development projects genuinely serve the interests of the small farmer?

Since the days following South Asia's "Green Revolution" development planners and rural sociologists have attempted to answer these questions. Many have casually observed that after decades of agricultural development programs, the so-called intended beneficiaries, the small farmers, have not improved their lot. The Institute for Food and Development Policy, for one, has found reason to believe that many development projects have primarily benefited the rich rather than the poor. The possibility that these projects may in fact be counter-productive to the small farmer, the small fisherman or the upland dweller has also been seriously considered.

In an attempt to analyze this problem, a number of social scientists have embarked on critical inquiries that tended to pose ideological issues. This often led to polemical or rhetorical arguments which development planners and policy makers refused to dignify. In spite of this, critical social inquiries may be credited for their structural approach to the problem. Perhaps structures are indeed at fault here. But which structures? Class structures? Hardly. Economic structures? Quite possibly.

This chapter submits that existing practices in the agricultural industry as well as policies and procedures on the implementation of development programs, particularly those that govern agricultural aid and technology transfer, by nature, benefit an economic sector other than that originally intended. The information sector is the favored sector as contrasted to the agriculture sector, the intended beneficiary. Let us take the case of the Filipino rice farmer.

For many years, experts have pegged the causes of rice scarcity in the Philippines to inferior production technology, agricultural land conversion and uncontrolled population growth. To these, I would add a fourth factor, the shift of agricultural labor to information-related jobs. In a tracer study conducted by the Department of Education, Culture and Sports it was determined

that only two out of one-hundred Bachelor of Science in Agriculture graduates go back to their lands to farm.

All of these were valid observations for a time. During the seventies and the eighties, however, poor production technology ceased to be a cause of the rice problem. What with the so-called breakthroughs of the International Rice Research Institute and the millions poured into the Department of Agriculture of which we have much to say later on.

From the mid-seventies onward, Filipino rice farmers were producing more and more except during the droughts that frequently accompanied that obscure natural phenomenon known as the El Nino. And yet, the marginal farmer - the poorest of the poor in the Philippine countryside - found themselves getting poorer and poorer. We may attribute this situation to the informatization of agriculture of which there are two dimensions: the market information dimension and the rise of the white-collared agricultural worker.

THE BINONDO RICE CARTEL

In October 1990, Filipino farmers enjoyed a bumper crop of rice from the July-September cropping season. It was one of the most bountiful harvests ever recorded in Philippine history. In the province of Camarines Norte, not particularly known as a rice producing area, farmers averaged one-hundred cavans of harvested paddy per hectare.

On November 5, President Corazon Aquino upon the recommendation of Agriculture Secretary Senen Bacani announced that the price of rice will be increased. And indeed it was, at an average of three pesos per kilo.

In fairness to the Aquino government, it should be stated that a week prior to her announcement of an impending price increase, the Central Bank was forced to devalue the peso because of a record government deficit and the increase in the price of crude brought about by the Gulf crisis. Furthermore, the Agriculture Secretary pointed out that the imported rice stocks were dwindling. But one wonders if the government is justified in jacking-up the price of rice in spite of the record harvest.

With the unprecedented bumper crop, one would conclude that a drop in the price of rice is imminent. Since the supply is high, the demand will go down and consequently, the price. This, however, does not necessarily mean lower returns for the rice farmer since he has more to sell. Well this is how it goes in theory.

The truth of the matter is that during the last quarter of 1990, the entire nation groaned as the price of rice and other commodities went up. Rice farmers who were expected to gain from the situation were likewise disadvantaged. They were not able to sell their produce at reasonable prices. On one hand, their bumper crop entailed expensive inputs - certified high yielding varieties, irrigation, pesticides and fertilizer. On the other, middle men bought their harvest at cutthroat prices leaving them penniless and in debt.

One needs to know the nature of the Philippine rice industry in order to understand how this situation came about. And the nature of the rice industry is such that information, particularly market information, means money and power.

For all practical purposes, the Philippine rice industry is controlled by a group of obscure Filipino-Chinese businessmen called the Binondo Rice Cartel. The group, which is known in some circles as the Big Five, is based in the rice marketing hub of the Philippines, Dagupan Street in Tondo.

Employing a nationwide marketing network composed mainly of fellow Filipino-Chinese traders, the cartel has held a viselike grip over rice trading since the post World War II years that enable them to virtually dictate the buying price of dried paddy all over the country. Anywhere in the Philippines, one could see rice mills owned by these traders. Often, the farmer has no other choice but to sell his produce to these traders.

Now let us look at the larger picture, the trends which contribute to the perpetuation of the market information problematique.

This situation stems from worldwide informatization trends. The guiding philosophy of aid or official development assistance is such that it lends very well to these trends. The US Congress, in particular, states that the purpose of foreign aid is to "assist the people of less developed countries in their efforts to acquire knowledge and the resources essential for development and to build the economic, political, and social institutions which will meet their aspirations for a better life..."

The focus on knowledge acquisition, information generation and institution building in agricultural development programs may have been founded on the Chinese proverb, "Give a man a fish and he eats for a day. Teach a man to fish and he eats for a lifetime." But given the actual development experience, this argument may have been carried on a little too far.

THE RISE OF THE WHITE-COLLAR AGRICULTURAL WORKER

If cost-analyses were to become the measure of the nature of an undertaking, then agriculture and rural development may soon cease to be a field activity. It is fast becoming a desk-job. In other words, in such projects more and more funds are being allocated to information related activities and less and less to actual farming activities.

An analysis of technology transfer and agricultural aid policy would reveal the following stakeholders: the national government whose bureaucratic machinery administers the funds; research and development institutions that generate the technology and recommends the mode of transfer; non-governmental organizations which are sub-contracted to implement certain project activities; financial institutions such as rural banks, land banks, national banks,

regional and international banks; the academe among whose ranks come the consultants and experts; local agribusiness marketing networks; machinery, chemical and fertilizer industries; consumers of agricultural products; and, lastly, the person who is supposed to be the beneficiary of all these programs, the small farmer representing the small fisherman, upland dweller, rural housewife and out-of-school youth.

It may be noted that the only stakeholder that may be truly classified under the agricultural sector is the last mentioned, the small farmer. The government, R and D institutions, NGO's, banks, the academe and agribusiness belong to the information sector. The industries, although mostly belonging to the manufacturing sector, are partly with the information sector.

We have reason to hypothesize that in agricultural and rural development programs more funds are being poured into the information sector than into the agricultural sector. Consequently, the economic benefits of technology transfer and agricultural programs accrue more to the first six stakeholders than the farmers.

A case in point is the Masagana-99 rice production program of the Philippines. The M-99 program involved the propagation of HYV (high yielding variety) technology all over the archipelago. The program led to record rice yields and the Philippines was transformed overnight from a rice-importing country to a rice-exporting country. There were adequate rice surpluses from 1975 to 1985. In 1986, a group of concerned scientists from the University of the Philippines Los Baños drafted a position paper that was presented to President Corazon Aquino. The paper stated in part:

> *The irony of this allegedly glaring success, however, is that it has been tragically negated and swept away by the worsening poverty of the rice farmers themselves who adopted the HYV technologies even as they admittedly witnessed remarkable yield increases in their farms.*
>
> *"Why have we remained poor and barely able to survive despite improved technology in rice production?" was the resounding voice heard from farmers...While farmers actually doubled their rice yields and some even more their production costs (especially for chemical fertilizers and pesticides) on the one hand, more than tripled in the long term, upsetting the gains realized from improved yield...The supposedly thousands of beneficiary farmers of the new technologies had become poorer than ever.*

Whose interests were served? Multinational chemical companies such as Du Pont, Shell, Ciba-Geigy and their local representatives; scientists involved in the R and D of this technology; consultancy firms; advertising firms such as J. Walter Thompson; contractors and engineers who built dams and irrigation facilities; rural and government banks; middlemen; agents who got their commissions and the government officials who were bribed to facilitate these

contracts; and most especially, the scientist-manager whose services were required by the increasingly technocratic programs of the Department of Agriculture and the Bureau of Agricultural Extension.

The position paper further declared that "the majority of our agricultural scientists and technicians" shared the blame with the corrupt government that profited from the Green Revolution "while the masses of our people languished in abject poverty and hunger." (p.7)

The embarrassing disparity between the earnings of a development worker and that of his client is another symptom. The international "expert" is the most glaring example of this. In an editorial critical of international aid, the February 1989 issue of the World Press Review commented:

> *Development-aid experts from industrialized nations usually earn at least $5,000 a month, tax-free --often 20 times what the Third World ministers and officials they advise make. All over the world, university professors--well paid at home--go on sabbatical as United Nations experts for $7500 a month, plus travel and expenses.*

How much would these rates be by 2006 standards? Furthermore, how much does a small farmer earn? He is lucky if he can net $50 a month.

One wonders where the millions of funds poured into agricultural development programs went. As far as personal service costs are concerned, most of these went to white-collared agricultural workers---accountants, scientists, technocrats--many of whom have never even planted, raised or harvested anything at all.

If this is the trend, then agricultural development programs are actually pump priming the information sector not the agricultural sector. All too often, the benefits do not trickle down to the rural populace. The poor farmer remains poor. Agricultural aid and official development assistance are actually injections into an information-based economy.

THE NEED FOR POLICY RATIONALIZATION

In earlier chapters, we have proposed in theory that increased informatization has certain consequences in developing countries. At the empirical level, these consequences may be observed through an analysis of technology transfer and aid policy. It is hypothesized that existing technology transfer and aid policies contribute more to the information sector than to the agricultural sector. It is further hypothesized that technology transfer and aid policies may contribute to increased social inequality.

These arguments need to be tested empirically. Operationalizing the contributions to the information sector would entail the cost analyses of randomly sampled agricultural development programs in the Third World. Programs financed by loans and grants should be equally represented in this sample. Whether or not the books will be made accessible to researchers by governments, regional and international lending institutions, implementing agencies and contractors is yet another matter.

One thing is certain though. If indeed the foregoing arguments are valid, policies governing technology transfer and aid in agricultural development programs need to be rationalized. The situation, if left unabated, may soon become untenable to the millions of small farmers, small fishermen, upland dwellers, rural housewives and out-of-school-youth. And no matter what world view one espouses, it would be for the interest of the First World that this point is never reached.

Rationalization need not mean a reduction of monies awarded to the information sector. It primarily means the rearrangement of priorities and the increase of allotment to actual farming activities in the case of agriculture or to direct social services in the case of rural development.

Informatization is a global trend and there may be no way of going around it. Perhaps it will be difficult to conceive of another acceptable yet workable scheme to implement aid or official development assistance. Indeed, teaching a man how to fish would certainly feed him for a lifetime. But no matter how hard one teaches, no matter how much resource is poured into this activity, a poor man just cannot learn on an empty stomach.