

THE M99 DELIVERY SYSTEM: HOW WELL DOES IT WORK  
IN CAMARINES SUR?

CONTENTS REVISED

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Frank Lynch, S.J., and  
Jose V. Barrameda, Jr.

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**ABSTRACT.** In mid-October 1973, 600 rice farmers in Camarines Sur were interviewed regarding their awareness and practice of modern farming techniques, and the amount of cash they invested in various inputs for the current rice crop. At the same time, Municipal Development Officers (MDOs) and Production Technicians (PTs) were interviewed regarding their perceptions of the Masagana 99 rice-production program, the Samahang Nayon, compact farming, and agrarian reform in general. Four additional studies were done about the same time, asking questions which had not been asked in the two earlier surveys. On grounds of all six researches, it was found that although agrarian reform was seen as a shared responsibility, perceived involvement in other government programs differed by the employees' official position. M99 PTs were rated by two measures other than the efficiency rating scales of their own agencies. The former ratings were generally low and did not correlate with the uniformly high ratings given by the technicians' agencies. Especially notable was the general failure of PTs to involve their farmer-advisees in the making of the farm plans and budgets. Loans were generally received on time by M99 borrowers, but there is evidence that many farmers did not spend all their cash loans for the corresponding inputs. As of August 31, 1974, the payment of Phase I loans stood at 72 percent of the amount borrowed. Farmers working irrigated land were repaying faster than those with rainfed parcels. Appropriate conclusions were drawn.

This research report is based on findings made in the SSRU's Quick-Look Survey 1 (mid-October 1973), Small Study 1 (mid-October 1973), Small Study 2 (September 1973), Special Study 1 (October-November 1973), Special Study 2 (mid-November 1973), and Special Study 3 (mid-October 1973). A technical summary of QL1 will be found in Appendix A of the "SSRU Research Report Series," No. 1. Technical summaries of Small Studies 1 and 2, of Special Studies 1, 2, and 3, as well as of QL1, are available on request. The authors are the SSRU director and publications officer, respectively.

Previous SSRU Research Reports have answered two questions about rice farmers in Camarines Sur: (1) What do they want from the Philippine government? and (2) Does having a Masagana-99 loan, or belonging to a compact farm or the Samahang Nayon lead to bigger rice crops yields or to the practice of modern farming techniques? We found that farmers want, above all, better water management, more widespread land reform, and more off-farm employment opportunities. We further discovered that an M99 loan does make a difference, especially on rainfed riceland, and that membership in a compact farm also helps. Because it was so new to most farmers in our sample, we could say nothing with certainty about the benefits of the Samahang Nayon.

In the present report we address ourselves to the so-called delivery system associated with the M99 rice-production program. The general question we ask is apparently simple enough: How well does it work in Camarines Sur? However, since the package to be delivered to farmers includes information (and motivation), credit, physical inputs, and marketing facilities, an adequate answer to that seemingly easy question would touch on all these elements. Moreover, it would place the M99 program in perspective by relating it to other important and concurrent rural development programs, such as the formation of compact farms.

The burden of this report is somewhat lightened by the fact that the data from the second SSRU report (Research Report Series, No. 2) have already answered some questions about the M99 package. Thus, since we know that fertilizers and chemicals were very widely used by M99-assisted farmers, almost all of whom got these inputs from M99 outlets and on time, we can be sure that this aspect of the delivery system functioned satisfactorily. On the other hand, we also know, from the testimony of those most involved in the program, that certified seeds were not available in sufficient quantity, and that plans for involving the National Grains Authority in the transport and purchase of palay could not--for various reasons--be realized fully or even satisfactorily. The result was that in Phase I of the M99 program many

farmers used substandard rice seeds and most palay was sold to private dealers, who offered better prices and fewer restrictive conditions than the NGA.<sup>1</sup>

Taking these facts for granted, then, we propose to consider, first, the perceptions which key government personnel, operating at the municipal and barrio level, had of the M99 delivery system and related programs as of mid-October 1973. The presentation of these views will be preceded by a province-level, semi-official understanding of the same subject matter. This will allow us to compare the two views later and to judge to what extent they are in agreement.

Second, we shall seek measures of the efficiency of field technicians who worked in Camarines Sur. In particular, we shall consider the extent and origins of modern-technique awareness among rice farmers as of mid-October 1973 in order to discover how often this knowledge is traceable to government fieldmen, and how often to others. Further, a special subsample of M99-loan recipients and their technicians will be studied to determine the success of the latter in (a) getting their advisees to think and act as modern farmers, and (b) involving them in the making of a farm plan and budget. Each technician's level of success, expressed in a numerical rating, will then be compared with the scores given the same technician by the government organization (e.g., the Bureau of Agricultural Extension) which employed him. This way we can see what kind of correlation exists between our rather narrowly defined proficiency measures and the more broadly-based evaluations given by the government agency.

<sup>1</sup> Information from Nicanor S. Clasio, provincial program officer of the National Food and Agriculture Council (NFAC), in an interview with J. V. Barrameda, Jr. (October 8, 1974). We are grateful for Mr. Clasio's sharing of his candid views.

Third, in relation to credit we shall ask of the available data whether or not M99 loans were received in due season, that is, at the particular time when they were needed for farming purposes. Moreover, by comparing the amount that farmers actually received (as entered in their approved loan applications) with the responses given in our interviews with them, we shall discover the incidence of underspenders and overspenders among M99 borrowers.<sup>2</sup> Finally, we shall give a report on the repayment of Phase I loans.

## FINDINGS

### Section A: How Government Field Personnel Perceive the M99 and Related Programs<sup>3</sup>

During Phase I of the Masagana 99 rice-production program, farmers of the Bicol River Basin area of Camarines Sur were assisted by 142 production technicians (PTs), each of whom had a minimum responsibility of 200 hectares of riceland.<sup>4</sup> Given the size of the average rice holding in Camarines Sur (around one hectare), this meant that most PTs were expected to deal with well over 100 rice farmers, and probably close to 200. They were thinly spread indeed.

<sup>2</sup> By an underspender we understand one who reports spending less for farm inputs than he received for these purposes in his loan; an overspender is one who says he spent more than he received for these purposes.

<sup>3</sup> Data presented in Section A are derived principally from SSRU Small Study 1, entitled "Program awareness of MDOs, PTs, and FMTs in Camarines Sur." This survey was fielded in mid-October 1973, its project director being J. Mayo M. Ragrajio. Technical details of the study are found in SSRU Research Activity Summary, No. 2

Other important sources of information for this section are structured interviews conducted by Jose V. Barrameda, Jr., on October 8, 1974 (Nicanor B. Clasio and Adolfo Badiola) and October 10, 1974 (Atty. Cleto Deniña). These three informants played key roles in Phase I of the M99 program (for the NFAC and BAE, the DLGCD, and the DAR, respectively).

<sup>4</sup> Figures from Neheil San Jose, secretary, M99 program in Camarines Sur.

The designation "Production Technician," or PT, was applied to any technician assigned to assist farmers in relation to the M99 production program. Many people so assigned were permanent employees of government agencies which predated the M99 program, especially the Department of Agrarian Reform (D.A.R.) and two bureaus of the Department of Agriculture and Natural Resources, namely, the Bureau of Agricultural Extension (B.A.E.) and the Bureau of Plant Industry (B.P.I.).<sup>5</sup> For purposes of the M99 program, however, all 142 PTs of Camarines Sur, regardless of existing affiliations, reported to the National Food and Agriculture Council (NFAC) in the person of Nicanor S. Clasio, the NFAC provincial officer. During SS1 we interviewed 65 PTs, who represented every municipality in the SSRU study except Del Gallego.<sup>6</sup>

Another important field person--not directly concerned with farmers in M99 matters, however--is the Municipal Development Officer, or MDO, the highest-ranking representative of the Department of Local Governments and Community Development (DLGCD) at the municipal level.<sup>7</sup> For purposes of SS1, we interviewed all MDOs in the survey area (two cities and 31 municipalities of Camarines Sur) except the one from Del Gallego--hence 32 in all.

Compare the ratio of 1:200 with the technician:hectares ratio of two other Asian countries at the time they accomplished their programs of agrarian reform: Japan, 1:5; Taiwan, 1:6. During the Nueva Ecija Land Reform Integrated Development Program (1970-72), the ratio was 1:346. See de los Reyes 1972:90.

<sup>5</sup>The alternate designations of these permanent employees are the following: DAR technologist (30 of them in the target area during Phase I); B/A farm management technician, or FMT (96 of them in Phase I); and BPI Plant Pest Control Officer, or PFCO (16 in Phase I).

<sup>6</sup>For provincewide studies as this, the SSRU study area regularly includes the cities of Naga and Iriga and 31 municipalities (all but Caramoan, Garchitorena, Presentacion, and Siruma--towns on the Caramoan Peninsula that extends to the East, towards Catanduanes).

<sup>7</sup>In cities, such as Naga and Iriga, the corresponding official is called the City Development Officer, but we here refer to all such persons as MDOs.

The view from above

SS1 was concerned with the knowledge and perceptions which MDOs and PTs had relative to the M99 and related government programs. Before summarizing our findings in this regard, we present, (1) a brief description of how the M99 delivery system was supposed to operate during Phase I of the program, and (2) a province-level view of how the rice-production program was intended to relate to other government efforts, such as the Samahang Nasyon, land reform, and compact farm programs.

Seeds, fertilizers, and chemicals. Farmers who did not have suitable seeds for planting were given cash for this purpose as part of their M99 loans. They were directed to the BPI or registered seed producers for their requirements.<sup>8</sup> Fertilizers, pesticides, and woodicides were specified as to composition and appropriate time of application in the farm plan and budget (FPB) which was an essential part of every M99 loan application. Corresponding to these specifications was a system of chits entitling the farmer to draw exactly what he needed from an accredited dealer, or outlet; further, to assure that the timing would be right, these chits, issued by the PTs to their farmer-advisees, were valid only for a specified five-day period. To get what he needed, the farmer presented his chit or chits, signed a delivery receipt for the fertilizers and chemicals he received, and went on his way. The dealer later cashed this delivery receipt with the ACA/Facoma or a bank (Philippine National Bank or a rural bank)--wherever the farmer had his M99 account. The transporting of seeds and other inputs from source to farm was the individual farmer's responsibility.

Palay storage, transport, and sale. The National Grains Authority (NGA) or bonded warehouses were to receive the palay produced by M99 borrowers.

<sup>8</sup> Because there was a shortage of certified seeds during Phase I, farmers frequently bought seeds which came from sources not registered for such sales.

This was in keeping with a marketing agreement the borrower signed in getting his loan. In the absence of an NGA or bonded warehouse, any other warehouse could be used, provided it was under the effective control of the farmer's credit agency, that is, the PNB, RB, or ACA.

If the reported produce was not to be sold immediately, a warehouse receipt was issued in favor of the credit institution, for the account of the farmer. If the value of the deposited palay was greater than the amount of his M99 loan, the farmer could present the warehouse receipt to his credit agency and request a commodity loan secured by the receipt, to mature at the time the deposited palay was sold. When the palay was in fact sold, the NGA or warehouse was to remit the proceeds to the credit institution where the farmer got his M99 loan, and perhaps a subsequent commodity loan. The bank or ACA then deducted what it had lent the farmer (plus any interest charges) and paid him the remaining balance.

M99 borrowers were expected to sell to the NGA, in keeping with the marketing agreement mentioned earlier.<sup>9</sup> Further, the NGA was supposed to pick up the palay of M99 borrowers at the farm site and bring it to the storage place provided for the purpose. Those not selling to the NGA had to provide their own transportation.

The interrelation of programs. How the various programs--land reform, compact farms, M99, and the Samahang Nayon--were intended to complement one another is variously explained at the provincial level. The generalized formula starts with the express presumption that all programs are in fact complementary to one another. Each helps the others. Then the specifics are given, often in this fashion: (1) M99 and CF: since M99 loans are given

<sup>9</sup>As a matter of fact, most farmers sold to middlemen, brokers, and the like, who paid them a better price than the NGA was offering. Further, the NGA had many burdensome requirements (such as a specified moisture content) and few personnel available to fetch palay from the farm site. As a result, the NGA's involvement in the marketing of M99-assisted palay was not so great as was planned.

only to CF-members, the loan program stimulates formation of more such groups; in turn, the CF program employs a joint-liability concept which makes loan repayment more likely; (2) LR and CF: CF and LR seek the same goals-- increased productivity and more equitable distribution of income; by increasing the number of amortizing owners (through LTCs), the LR program makes it easier for larger numbers of CFs to be formed; further, DAR technologists (who are LR specialists) recruit members for CFs; (3) LR and SN: farmers who receive LTCs must join the SN; SN's Barrio Guarantee Fund (one caven of pay per hectare per harvest per member) assures payment of amortization by amortizing owners; (4) CF and SN: SN prepares training programs for seminars to be given to CF members; CF members become the core of the SN to which they belong.

The most sharply perceived relationships seem to be those between the M99 and CF programs, on the one hand, and, on the other, between the SN and land reform. The ties between the CF and SN organizations and between the CF and LR programs appear to be less clearly and concretely conceptualized.

#### The view from below

In analyzing the replies of our MDO and PT respondents to questions about the M99 delivery system and the interrelation of government programs, we distinguished two categories of PT according to length of service. Those who had been PTs for one year or more we called "old" PTs (we interviewed 29 of them); those who had been in the service for less than a year we called "new" PTs (we had 26 in all). The two types of PT are referred to as PTOs and PTNs, respectively.

In the paragraphs that follow we first give some background information about MDOs and PTs. Then we present findings regarding the understanding each group showed of the M99 delivery system and of the interrelations existing among several rural programs of the government.



## Background characteristics of MDOs and PTs

### A.1. MDOs and PTs are, as groups, similar in terms of mother tongue, sex, and education.

Almost all MDOs and PTs are mother-tongue speakers of Bikol and are college graduates. In both groups, about one-fifth are female. Among the PTs, the 11 percent who finished high school but not college are all from the PTO category.

### A.2. MDOs and PTs differ significantly, however, in civil status, age, and length of government service.

Whereas over 90 percent of MDOs are married, the figure for PTs is closer to 50 percent (for PTNs, only 27 percent; for PTOs, 64 percent).

The differences in civil status are related to age differences. The median ages are as follows: MDOs, 41 years; all PTs, 30; PTOs, and PTNs, 33 and 24.5 years, respectively. Another way of expressing this difference is to say that no MDO in the sample is under 30 years of age, while a full 46 percent of PTs are in that category.

MDOs are representatives of the Department of Local Governments and Community Development and have been in that branch of the government service (or its predecessor, the PACD) for a median period of 12 years.

Most of the PTs (about 80 percent) are employed by the Bureau of Agricultural Extension, the rest being about equally from the Bureau of Plant Industry and the Department of Agrarian Reform. PTs have been in government service only about one year, on the average (for PTOs, four years; for PTNs, five months).

In terms of duration of stay in the municipalities where they are presently assigned, additional striking differences are found. The median months are as follows: MDOs, 43.5 months; all PTs, 12 months; PTOs, 30 months; PTNs, four months.

Seeds, fertilizers, chemicals, and credit

Respondents were asked open-ended questions about how seeds, fertilizers, pesticides, and woodicides were supposed to reach M99-assisted farmers. Answers were classified as complete if the respondent mentioned the source of the input, arrangements for getting it, and the usual mode(s) of payment. If any one of these elements was not given, the answer was coded as incomplete. Other possible answers were "Don't know" or "Not my responsibility."

A.3. The delivery system for seeds is explained best by PTNs, followed by PTOs and MDOs, in that order.

While 54 percent of PTNs gave complete answers, the figures for PTOs and MDOs were 38 and 34 percent, respectively. In no case was any intergroup difference significant, however (which means, in effect, that the awareness of one group might be just as good--or bad--as that of any other). One out of six MDOs stated that he had no reason to know about seed-procurement procedures--"not my business."

A.4. The delivery system for fertilizers and chemicals is (again) explained best by PTNs, followed by PTOs, and MDOs.

Here the differences are greater. Complete answers were given by 73 percent of PTNs, 64 percent of PTOs, and 38 percent of MDOs. The difference between PTNs and MDOs is significant (0.05), but that between PTOs and MDOs is not. Once more, a certain number of MDOs (12 percent) answered that farm inputs were not their concern.

A.5. Awareness of available credit sources is widespread, with the PNB and rural banks especially well known in this connection.

Ninety-four percent of the respondents mentioned the PNB and rural banks as sources of credit for M99 borrowers (three MDOs were the only respondents who did not mention these institutions).

The ACA and Facoma were less widely recalled. The percentages mentioning them were those: PTNs, 85 percent; PTOs, 64 percent; MDOs, 59 percent.

Landlords and other private persons were suggested by MDOs (31 percent), PTOs (26 percent), and PTNs (15 percent).

Transport, storage, and sale of palay

- 4.6. The plan to have the NGA pick up palay at the farm site was not widely known.

Over 80 percent of respondents stated simply that they knew of no arrangement regarding the transport of palay from the farm to a warehouse. The range was from 73 percent for PTNs to 87 percent for PTOs.

It must be recalled that the question which we asked (at a time when only about half of the province's farms had been harvested) did not concern the way things were, but the way they were planned and supposed to be.

- 4.7. The existence of storage facilities for palay was moderately well known by PTs, but not by MDOs.

Those who answered in the affirmative were as follows: PTNs, 58 percent; PTOs, 56 percent; but MDOs, 31 percent. The difference between PTs and MDOs is significant (0.05 level).

- 4.8. The expectation that M99 borrowers would sell their palay to the NGA was moderately well known by PTs, but not by MDOs.

Asked where the M99 borrower was supposed to sell his palay, 58 percent of the PTs mentioned the NGA. Only 31 percent of MDOs gave this answer. Once more, the difference is significant (0.05).

Larger percentages of all respondent groups mentioned private rice buyers (PTs, 62 percent; MDOs, 59 percent). Fewer gave an answer

which implied a completely free choice: those who said "wherever the farmer gets the best price" were 35 percent of all respondents (of PTs, 31 percent; of MDOs, 34).

The interrelation of programs

9. Virtually every respondent, regardless of position, feels he plays a part in the nation's land reform program. For the CF and SN programs, however, perceived involvement varies somewhat by official role.

Thus, while all MDOs and 97 percent of PTs say they are helping the LR program, the figures for the other programs are not quite so high for both groups. MDOs are to a person involved in the SN (a program of the DLGCD), but only 82 percent feel they are assisting the CF program. On the other hand, while 99 percent of PTs say they contribute to the CF program (under the DANR), the figure is 90 percent for the SN.

10. The CF and SN programs are seen as parallel but mutually supportive approaches to land reform.

From the most common replies of MDOs and PTs the following pattern of expectations may be constructed.

Agent or organization	Expected behavior			
	Toward MDOs	Toward PTs	Relative to CF	Relative to SN
MDO	Cooperate	Coordinate	Inform, motivate	Organize, teach skills
PT	Coordinate	Cooperate	Organize, teach skills	Inform, motivate
CF	-	-	-	Reinforce, facilitate
SN	-	-	Reinforce, facilitate	-

NDOs feel that their job is to organize SMEs and teach members the various organizational skills they must learn; PTs feel the same way about the CF, with emphasis on farming skills. Both say they tell farmers about "the other organization" and encourage them to join it. As well, both NDOs and PTs state that they coordinate their efforts with one another.

The SN makes it easier for PTs to contact farmers--it facilitates CF activities and reinforces them. Members of CFs, being involved in a practical cooperative endeavor, make ideal members of the SN, which is a pre-cooperative organization.

Less clearly and uniformly seen by respondents is how these inter-related organizations are in turn related to what all agents see as their common goal--land reform.

#### Section B: The Efficacy of K99 Technicians<sup>10</sup>

Production technicians employed in the K99 rice-production program have much in common with the Biblical Martha--or, closer to home, the average rural public school teacher. They are "busy about many things." Among those many things are three which are of cardinal importance and may be expressed in quantified form. For this reason they can be used to measure the success with which PTs are doing their jobs. Reference is to the awareness farmers report of modern techniques, the extent to which they practice them, and the degree to which farmers were involved in the preparation of farm plans and budgets. In each case we shall ask to what degree the PTs were responsible for this awareness, practice, or farmers' involvement.

<sup>10</sup>The data found in Section B come from Blocks 4 (Technique awareness) and 6 (Aspirations) of Quick-Look Survey 1, entitled "Rice-farmer practices and priorities in Camarines Sur" (mid-October 1973), and from two smaller studies. The first of these is Small Study 2, "PT/PMT efficiency in Camarines

Awareness and practice of modern techniques. We know from the second SSRU report that the proportion of respondents using recommended farm practices varied by riceland type and by practice and, on rainfed riceland at least, significantly by M99-loan status (see Tables R502.09-10, on pages 21-23 of Research Report Series, No. 2). In general, moreover, these proportions were relatively high, the medians (across eight practices) being about .80 for irrigated parcels and about .67 for rainfed.

Here we ask several related and prior questions; namely, (1) For the practices under consideration, what proportion of farmers knew about them (even if they didn't practice them), (2) To what extent was this awareness traceable to M99 PTs, and to what extent to others, and (3) Did farmers who learned about these techniques from an M99 PT show a greater tendency than other farmers to practice them? The answers follow.

B.11. Reported awareness of modern farm practices is virtually universal in Camarines Sur.

At least among rice farmers working irrigated and rainfed parcels, the proportions of knowledgeable respondents are very high. The median figures (across seven practices) are .97 for irrigated and .91 for rainfed riceland (Table R503.01).

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Sur" (pilot study; September 1973); the second is Special Study 2, "PT/FMT efficiency in Camarines Sur" (final study; November 1973). Official efficiency ratings given to our subsample of PTs were contained in confidential communications from the agencies employing them.

J. Mayo N. Ragrajio analyzed the PT efficiency data in SpS2 and submitted a preliminary report, which became the basis for the Communication Fidelity subsection here.

Technical details about QL1, SS2, and SpS2 are found in SSRU Research Activity Summaries, Nos. 1, 3, and 6, available on request from the SSRU.

Table RSO3.01. Significance of differences of proportions of rice farmers using/aware of selected modern techniques, by kind of riceland and M99-loan status of cultivator (Camarines Sur, mid-October 1973)

Characteristic	Irrigated			Rainfed		
	M99	Non-M99	Signif. <sup>a</sup>	M99	Non-M99	Signif.
1. <u>Farmers using/aware of modern weeding techniques<sup>b</sup></u>						
Proportion	.98	.96	n.s.	.92	.85	n.s.
2. <u>Farmers using/aware of modern seed-testing techniques</u>						
Proportion	.94	.86	0.05	.90	.73	0.01
3. <u>Farmers using/aware of modern land-preparation techniques</u>						
Proportion	.97	.91	0.05	.94	.77	0.01
4. <u>Farmers using/aware of modern transplanting techniques</u>						
Proportion	.99	.96	n.s.	.95	.89	n.s.
5. <u>Farmers using/aware of modern pest-control techniques</u>						
Proportion	1.00	.99	n.s.	1.00	.92	0.01
6. <u>Farmers using/aware of modern weed-control techniques</u>						
Proportion	.99	.96	n.s.	1.00	.93	0.01
7. <u>Farmers using/aware of modern fertilizers</u>						
Proportion	1.00	.97	0.05	.99	.82	0.01

<sup>a</sup>The Difference-of-proportions test was used throughout.

<sup>b</sup>For the meaning of these "modern" techniques, see "SSRU Research Report Series," No. 2, p. 26.

- B.12. Nonetheless, significant differences exist between M99 and Non-M99 respondents, particularly where both are cultivating rainfed parcels.

Differences between M99 and Non-M99 farmers on irrigated land are fewer (three out of seven vs. five out of seven) and less striking (0.05 level vs. 0.01 level) than they are on rainfed land. There are important M99/Non-M99 differences on both kinds of riceland for three practices: seed-testing, land-preparation, and fertilizers. Additionally, significant differences occur only on rainfed parcels for both weed and pest control (Table RSO3.01).

- B.13. On the average, relatively few farmers who know of a technique fail to practice it.

Generally speaking, about 75-80 percent of those who are aware of a modern farming technique also report that they practice it (see Table RSO3.02). The median knowledge-practice gap (the difference between the proportion of farmers who are aware of a technique and the proportion who use it) is only about .16.

- B.14. However, while M99/Non-M99 differences in this regard are negligible for farmers working irrigated parcels, they are significant for rainfed riceland.

The median knowledge-practice for M99 farmers is .08; for Non-M99, .18. The median figures for M99 and Non-M99 respondents working irrigated parcels are identical (.15); for rainfed land the median gaps are .08 and .19, respectively (data derived from Table RSO3.02).

On the contribution to awareness of M99 PTs

- B.15. M99 Production Technicians are the most frequently reported sources of technique awareness--but for M99 respondents.



Table RS03.02. Proportion of rice farmers who reported practicing and/or being aware of selected modern farming techniques, by kind of riceland and M99-loan status of cultivator (Camarines Sur, mid-October 1973)

Characteristic	Irrigated			Rainfed		
	M99	Non-M99	Total	M99	Non-M99	Total
<b>1. Farmers using/aware of modern weeding techniques</b>						
Aware of	.98	.96	.97	.92	.85	.88
Using	.72	.63	.67	.84	.62	.71
Difference	.26	.33	.30	.08	.23	.17
Total n	141	143	284	105	164	269
<b>2. Farmers using/aware of modern seed-testing techniques</b>						
Aware of	.94	.86	.90	.90	.73	.80
Using	.76	.75	.75	.79	.56	.65
Difference	.18	.11	.15	.11	.17	.15
Total n	141	143	284	105	164	269
<b>3. Farmers using/aware of modern land-preparation techniques</b>						
Aware of	.97	.91	.94	.94	.77	.84
Using	.94	.85	.89	.86	.58	.69
Difference	.03	.06	.05	.08	.19	.15
Total n	141	143	284	105	164	269
<b>4. Farmers using/aware of modern transplanting techniques</b>						
Aware of	.99	.96	.98	.95	.89	.91
Using	.85	.83	.84	.87	.50	.64
Difference	.14	.13	.14	.08	.39	.27
Total n	141	143	284	105	164	269

Table RS03.02 (cont'd)

Characteristic	Irrigated			Rainfed		
	M99	Non-M99	Total	M99	Non-M99	Total
<b>5. <u>Farmers using/aware of modern pest-control techniques</u></b>						
Aware of	1.00	.99	.99	1.00	.92	.96
Using	.98	.90	.94	.97	.81	.87
Difference	.02	.09	.05	.03	.11	.09
Total n	141	143	284	105	164	269
<b>6. <u>Farmers using/aware of modern weed-control techniques</u></b>						
Aware of	.99	.96	.98	1.00	.93	.96
Using	.86	.74	.80	.93	.76	.83
Difference	.13	.22	.18	.07	.17	.13
Total n	141	143	284	105	164	269
<b>7. <u>Farmers using/aware of modern fertilizers</u></b>						
Aware of	1.00	.97	.98	.99	.82	.82
Using	.94	.61	.78	.79	.29	.49
Difference	.06	.36	.20	.20	.53	.33
Total n	141	143	284	105	164	269

Of the M99-assisted respondents, about one-half say they learned about the various modern farming techniques from an M99 technician (Table RS03.03). Other sources--above all, friends, neighbors, relatives--account for another one-quarter to one-third, even for farmers with M99 loans. For the Non-M99 category, this "others" category accounts for fully 60-80 percent of the reported awareness.

RS03.03. Proportion of rice farmers using/aware of selected modern techniques, by reported source of knowledge, by kind of riceland, and by M99-lean status of cultivator (Camarines Sur, mid-October 1973)

Characteristic and Knowledge source	Irrigated			Rainfed		
	M99	Non-M99	Total	M99	Non-M99	Total
<u>1. Farmers using/aware of modern weeding techniques</u>						
M99 PT	.46	.15	.31	.51	.15	.30
CF	.21	.06	.14	.22	.02	.10
Self	.09	.18	.14	.05	.14	.10
Others	.24	.61	.41	.22	.69	.50
Total n	139	130	269	99	136	235
<u>2. Farmers using/aware of modern seed-testing techniques</u>						
M99 PT	.46	.15	.31	.49	.16	.31
CF	.20	.06	.13	.16	.02	.08
Self	.10	.24	.17	.12	.16	.14
Others	.24	.55	.39	.23	.66	.47
Total n	134	123	257	94	122	216
<u>3. Farmers using/aware of modern land preparation and transplanting techniques</u>						
M99 PT	.40	.11	.26	.44	.13	.26
CF	.23	.07	.15	.18	.01	.08
Self	.04	.16	.10	.03	.12	.08
Others	.33	.66	.49	.35	.74	.58
Total n	139	137	276	100	138	238

Table RS03.03 (cont'd)

Characteristic and Knowledge source	Irrigated			Rainfed		
	M99	Non-M99	Total	M99	Non-M99	Total
<b>4. <u>Farmers using/aware of pest/weed control and fertilizer</u></b>						
M99 PT	.49	.18	.34	.51	.11	.28
CF	.26	.06	.16	.31	.03	.15
Self	-	.06	.03	-	.08	.04
Others	.25	.70	.47	.18	.78	.53
Total n	85	83	168	65	89	154

On closing the knowledge-practice gap

B.16. However, M99 PTs are significantly more effective than others in moving farmers from knowledge to practice.

To give an example, on irrigated land, nine out of ten of the fertilizer-aware farmers who get this knowledge from PTs also use fertilizer; of those who learned from non-PTs, only six out of ten do this. For rainfed riceland the figures are six and four, respectively (Table RS03.04). For whatever reason, M99 technicians get farmers to reduce knowledge to practice more often than others do.

RS03.04. Rice farmers aware of modern fertilizing techniques, by source of knowledge, kind of riceland and whether they actually used fertilizer or not (Camarines Sur, mid-October 1973)

Source of knowledge	Irrigated			Rainfed		
	Used fertilizer	Did not use	Total n	Used fertilizer	Did not use	Total n
499 PTs	92%	8%	60	65%	35%	49
Others	63	37	124	45	55	111
Total %	72%	28%	184	52%	48%	160

$$\chi^2 = 15.29 \quad df = 1 \quad p < 0.01 \quad \chi^2 = 3.93 \quad df = 1 \quad p < 0.05$$

Approval and practice: Communication Fidelity. In 1970, Tito Contado published a rating system for judging the effectiveness of extension workers in communicating to farmers what they set out to communicate. In deriving his index of Communication Fidelity, or CF, Contado considered, first, the level of awareness which the change agent hoped to achieve in his farmers, and the level of difficulty he perceived in this task.

The four levels of desired awareness (values 1-4) are knowledge, approval, experimentation, and adoption. The levels of difficulty (1-3) are easy, fairly-difficult, and definitely difficult. Multiplying the first value (level of awareness) by the second (level of difficulty) results in a figure called the Communication Input (CI). On the receiving side, the farmer's Communication Response (CR) is derived by using the same levels and values. The quotient gotten by dividing Communication Response (CR) by Communication Input (CI) is the Communication Fidelity (CF) score, or index.

To give an example, if a PT wishes to communicate adoption (level 4) of fertilizer use (rated as of level 2 difficulty--fairly difficult), the Communication Input (CI) will be  $4 \times 2$ , or 8. If the farmer with whom the PT is

dealing manifests only awareness of fertilizers (level 1), then his Communication Response (CR) will be only 1 & 2, or 3. The CF Index will be 2/8 or .25. Had the farmer been found to practice the use of fertilizer (as the PT intended), the CF Index would have been 6/8, or 1.0.

For each member of a subsample of 29 PTs we located among our respondents five-six farmers whom the PT had advised. We asked each PT what level of awareness (1-4) he had intended to communicate to his charges for each of seven practices, and what level of difficulty (1-3) he thought had been involved in each such transfer.<sup>11</sup>

We then looked at the completed interview schedules of these farmers to determine (1) what level of awareness they had actually achieved for each practice, and (2) to whom they attributed this. This information allowed us to arrive at two somewhat different measures: (1) the gross CF of a farmer--regardless of where the information and motivation had come from, and (2) the net CF of a farmer, that is, that proportion of his Communication Response which was in reaction to the Communication Input of a PT.<sup>12</sup> Further, for each of the PTs it was possible to get an average gross and net CF by adding up the CF scores of his individual farmers and dividing by their number (five or six).

Applying the above procedures to the available data, we find that almost all PTs aimed at level 3 or 4 of awareness (trial or adoption). The average perceived level of difficulty ranged from 1.34 to 1.16, the mean being 1.47, that is, between easy (level 1) and fairly difficult (level 2).

<sup>11</sup> The practices were modern weeding, seed testing, land preparation, transplanting, and use of pesticides, weedicides, and chemicals. Those seven were chosen on grounds of the replies of PTs in SS2 (conducted in September 1973).

<sup>12</sup> Two assumptions are made in computing the communication responses accountable to individuals other than PTs: (1) that the levels of difficulty that such persons are likely to encounter are of the same degree as those

The overall Communication Input of PTs ranged from 19 to 68 (mean, 36.48). The farmers' total Communication Response ranged from 18.60 to 53.42 (mean, 33.97). However, the response to PTs ranged from 7.40 to 44.00 (mean, 27.63); to others, .66 to 23.98 (mean, 6.34). Among these other sources of technique awareness were farmers, friends and relatives, landlords, and the Samahang Nayan.

Dividing the mean total CF (33.97) by the mean total CI (36.48) gives us an overall gross Communication Fidelity score of .92. The average net CF score (27.63/36.48) is .75. The distribution of net CF scores among the 29 PTs is the following.

Score	Frequency	Possible interpretation <sup>a</sup>
.90-100	6	Of superior efficiency
.80-.89	4	Highly efficient
.70-.79	7	Of ordinary efficiency
Below .70	12	Inefficient

<sup>a</sup>If one views the CF scores as percentile ratings and then uses the adjective descriptions of percentile ranges employed by Civil Service Form No. 52 (see below).

The preceding paragraphs can now be summarized in a series of statements.

On the CF scores of Production Technicians

B.17. Regardless of the farming technique involved, PTs generally aim at generating practice, not mere knowledge.

perceived by the technicians working in the place; (2) similarly, that the goals set by such persons are closely similar to those set by the technicians.

- B.18. Even among M99 borrowers, non-PTs remain an important source of awareness and motivation.
- B.19. PTs achieved the highest CF score relative to fertilizers and chemicals; the lowest, relative to seed selection and testing.  
The net CF scores for fertilizers and chemicals were between .85 and .91. For seed selection and testing the score was only .57.
- B.20. If one interpreted the Communication Fidelity scores of PTs according to Civil Service norms (Form 52), he would conclude that the average technician was less than highly efficient.

Getting farmer participation: The FPB Involvement Score. Another index of the efficiency of a PT is the extent to which his farmer-advisees were involved in the making of their farm plans and budgets. The rationale for this is as follows.

The FPB is an important element in modern farming, since the high-yielding rice varieties are "very specific with respect to the time and amount of fertilizer application, the time and application of agricultural chemicals for pest and disease control, and water control" (Barker and Abarientos 1974:14). It is, understandably, a prerequisite for an M99 loan, and every M99 borrower must have one--whether he knows of it or not.

A good FPB supposes an intimate knowledge of the particular farm for which it was made.

A plan good for one farmer may not suit another even if they farm in the same locality. Some farms need more plowing and harrowing than others. The inherent soil fertility and type of soil also affect the amount and kind of fertilizer needed. Moreover, not all farmers have the same management ability. A good farm plan must take such differences into consideration (ibid: 16-17).



If the making of an FPB is of great importance and requires first-hand knowledge of the farm involved, it is also a skill which the farmer must learn if he is to develop in the direction he should--toward greater human understanding and control of the elements with which he interacts.

In light of these considerations, it seems clear that it is not enough that a farmer should have an FPB; he should have been involved in its making. For he must eventually learn how to construct an FPB on his own. It follows that a technician who makes an FPB for the farmer, but without the latter's participation or awareness, is less than highly efficient in this aspect of his job.

Analyzing data from QL1 for the M99 borrowers who were advisees of our subsample of 29 PTs (see above), we discovered that 75 percent of the farmers had no idea they even had a written FPB. And in only 10 percent of the cases did a PT construct the FPB with the farmer present and helping (Table RSO3.01).

Table RSO3.05. M99-assisted farmers, by the status of their farm plan and budget (Camarines Sur, mid-October 1973)

Farmer's FPB status (self-reported)	No.	Percent
Unaware of a written FPB	119	75%
Unaware of <u>any</u> FPB	49 (31%)	
Has an unwritten plan	70 (44%)	
Has a written FPB, thanks to PT	26	16
PT made FPB <u>for</u> farmer (without farmer's participation)	10 (6%)	
PT made FPB <u>with</u> farmer	16 (10%)	
Has a written FPB, thanks to someone else	9	6
Another made FPB <u>for</u> farmer	2 (1%)	
Another made FPB <u>with</u> farmer	7 (5%)	
Has a written FPB, made by himself	5	3
Total	159	100%

Distinguishing, and assigning values to the different ways in which a farmer might have been involved in his FPB, we devised this scheme for an FPB Involvement Score.

Extent of involvement in FPB <sup>a</sup>	Score
Farmer not aware of having a written FPB	0
Farmer aware of having a written FPB, but someone other than PT was involved in making it	1
Farmer aware of written FPB, but it was made by the PT alone, without farmer's participation	2
Farmer aware of written FPB, which he made with the PT's help	5

<sup>a</sup>If a farmer reported that he had made his own FPB, with the help of no one, his case was not used in calculating his PT's FPB Involvement Score.

Applying the scoring system to the data on our subsample of 29 PTs and their M99-assisted farmers, we discover that the FPB Involvement Scores of PTs range from 0.00 to 4.20, with a median of 0.33. The distribution is as follows.

Score		Frequency	Possible interpretation <sup>a</sup>
Raw	%		
4.50-5.00	90-100	0	Of superior efficiency
4.00-4.49	80-89	2	Highly efficient
3.50-3.99	70-79	0	Of ordinary efficiency
0.00-3.49	below 70	27	Inefficient
Total		29	

<sup>a</sup>If one views the scores as percentile ratings and then uses the adjective descriptions of percentile ranges employed by Civil Service Form No. 52 (see below).

On the FPB Involvement Scores of Production Technicians

- B.21. Three-fourths of M99 borrowers are unaware that they have farm plans and budgets.
- B.22. Very few PTs involve farmers in the making of a farm plan and budget; in this respect, almost all PTs are inefficient.
- B.23. PTs who have been in the government service less than a year show significantly higher FPB Involvement Scores than their older colleagues.
- The median score for PTOs is 0.00; for PTNs, 0.67. Both are inefficient by our norms.

Comparison of scores. In the preceding sections, we described the same 29 PTs in terms of two different efficiency ratings, the Communication Fidelity Score and the FPB Involvement Score. For 25 of the same PTs we also know the ratings received (right after Phase I of the M99 program) from their own agencies. The latter scores were of two kinds, only one of which was percentile.<sup>13</sup> To facilitate the comparison of scores from different agencies, the numerical ratings (50-250) were converted to percentages (0-100). Furthermore, both the CF and FPB Involvement Scores can also be expressed in percentage form for the same purpose.

The three rating systems, with scores expressed as percentiles, divide the PT sample in strikingly different ways.

Percentile	BPI/DAR-BAE	CF Score	FPB Involvement Score
90-100	2	6	0
80-89	23	4	2
70-79	0	7	0
Below 70	0	12	27
No rating	4	0	0
Median category	80-89	70-79	Below 70

<sup>13</sup> DAR and BAE employees are rated by means of the percentile-based Civil Service Form No. 52, entitled "Efficiency record of the Bureau or

The BPI/DAR-BAE ratings are most kind to the PTs; the FPB Involvement Scores, least so. The CF scores are in between.

It is already clear that there must be precious little correlation among the scores received by individual PTs from the various rating systems. This is confirmed when we arrange the scores from two different systems in a two-by-two matrix to see how often a PT given a score of median-or-above by one system received the same kind of score from the other. Making three comparisons in this manner (CF vs. FPB, FPB vs. BPI/DAR-BAE, and BPI/DAR-BAE vs. CF), the result is invariably the same: a random scattering in the four cells. A PT rated high by one system is as likely to be rated high as low by the other system. The lack of correlation is evident.

On the comparison of PT ratings

B.24. PTs are rated high by their own agencies, low by the FPB Involvement Score, and in between by the CF Score.

B.25. The scores given by the three systems do not correlate.

Province of . . . for the six months ending . . . ." Four levels of performance are distinguished: 90-100 percent, superior degree of efficiency or excellence; 80-89 percent, high degree of efficiency; 70-79 ordinary degree of efficiency; below 70 percent, inefficient. Scores (for December 1973) given to the 19 DAR and BAE employees in our subsample of 27 PTs ranged from 81 to 92 percent, all in the "high" or "superior" efficiency categories.

BPI employees who are not supervisors are scored by means of the BPI Performance Rating Report Form No. 2 (for non-supervisors). In all, 10 factors are considered, namely: quantity of work, quality of work, job knowledge, job attitude, judgement, industry, public relations, initiative, ability to learn, and attendance and punctuality. Maximum score for any factor is 25 points; minimum is 5. Hence the range of total scores may be from 50-250, interpreted as follows: 225-250, outstanding; 175-220, very satisfactory, 120-170, satisfactory; 115 or below, unsatisfactory. Scores (for December 1973) given to the six BPI employees in the subsample of 29 PTs ranged from 180 to 215, all in the "very satisfactory" category. To allow for interagency comparisons, the four BPI levels were assumed to be equivalent to the four DAR-BAE levels, and percentiles scores derived for BPI employees.

### Section C: The Credit Delivery System<sup>14</sup>

This section assesses the credit delivery system under the M99 program. Three questions will be considered, namely, the timeliness of the production loan, the farmer-borrower's reported expenditures compared with the amount he borrowed, and the loan repayment rate of M99 farmers who borrowed during Phase I of the program.

Loan timeliness. Did farmers get their M99 loans when they needed them? To answer this, QL1 data were subjected to secondary analysis. Out of 353 respondents who obtained fertilizers for their farms, the 236 who reported having an M99 loan composed the actual respondent sample for the study.<sup>15</sup>

For purposes of the study, a null hypothesis was used; that is, it was hypothesized that whether farmers got their fertilizer from an M99 source or not, their M99 loans would be released on time or late with the same frequency. In short, loan timeliness did not depend on fertilizer source.

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<sup>14</sup>Data found in Section C are based on findings made in QL1 and derived principally from secondary analyses done in SSRU Special Study 1, entitled "Rice farmer expenditures and M99 loans in Camarines Sur," fielded in November 1973, with Jose V. Barrameda, Jr., as project director; Special Study 3, entitled "Fertilizer source and loan timeliness in Camarines Sur," conducted in November 1973, with Robert C. Salazar as project director; and a special study entitled "M99 (Phase I) repayment rate," conducted on September 30, 1974, by Jose V. Barrameda, Jr. Technical details of Special Study 1 and Special Study 3 are found in SSRU Research Activity Summaries, Nos. 4 and 7, respectively.

<sup>15</sup>We decided to limit the study to the loan-release for fertilizer since this input provides a sound-enough basis for determining the overall timeliness of loans. This is so because the loan-release of fertilizer is by purchase order (or chit), which has a five-day validity, and the release itself is made in three separate installments, as provided in the implementing guidelines for the financing scheme of Phase I of the M99 program.

The findings, briefly, are these.

C.26. Farmers almost invariably received their M99 loans on time.

Of the 236 respondents in the study, 218 (92 percent) reportedly received their fertilizer allotment when they needed it.

C.27. The difference between those who got their fertilizer from an M99 source and those who did not was nonsignificant.

Of the 194 who purchased fertilizer at an M99 source, 91 percent reported the release as timely; for the others the figure was 97 percent.

Amount borrowed vs. amount spent. Did farmers spend their M99 funds as their loan application indicated they would? For an answer to this, another special study, supplementary to the QL1 survey, sought to determine the extent to which the farm-input expenditures reported by QL1 respondents agreed with the farm-input loans which they had received through the M99 program.<sup>16</sup>

From the 600 QL1 respondents, 112 were chosen for study. The grounds for their selection were these: each had received an M99 loan and worked only one parcel of riceland, and that parcel was either irrigated or rainfed; further, his M99 loan-application form was available for inspection through his PT.

For two reasons, the comparison was restricted to reported expenditures for seeds, land preparation, and transplanting, on the one hand, and, on the other, the corresponding M99-loan allowance (a maximum total of P320 per hectare). The first was this, that at the time the first set of data (QL1) was gathered, most farmer-respondents had already spent their funds for the

<sup>16</sup> Fieldwork for the first set of data was done during the last week of October 1973 and, for the second set of data, in the second week of November 1973.

items just mentioned, but had not bought all their farm chemicals and fertilizers. Second, it was our experience that even where respondents had purchased all five inputs for which the H99 loan provided, they could remember details about the first three inputs, but tended to have vague or insufficient recollection of the cost of the farm chemicals and fertilizers they had used. This may have occurred because the mode of purchase (by chits) was still somewhat unfamiliar to them.<sup>17</sup>

For purposes of the study, it was hypothesized that the farmers' reported expenditures would not differ significantly from the amounts indicated in their approved loan applications.

As a matter of fact, they do differ significantly. For whereas the average loan applied for and received was P286.49, the average expenditure for the same items, reported by the same farmers, was only P239.23, a difference of P47.26 (0.05 level). Variation occurred by district, however, as Table R503.06 indicates.

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<sup>17</sup>The recall patterns of the respondents are as follows: for seed costs, 88 percent gave specific information; for land preparation, 99 percent; for transplanting, 99 percent; for farm chemicals, 62 percent; and for fertilizer, 58 percent. Another possible explanation of the differences in percentages (other than the chit system) might be this, that many respondents were really not recalling their most recent expenditures, but giving their usual costs; for fertilizers and chemicals, however, there were no usual costs, since these practices were new to them.

Table RSO3.06. Average M99 loan received for seeds, land preparation, and transplanting, compared with average amount spent for the same purposes, by district (Comarines Sur, mid-October 1973)

District	n	Average M99 loan (L)	Average spent (S)	Difference (L-S)	Signif. <sup>a</sup>
Sipocot	18	P302.90	P150.14	P152.76	0.01
Naga	21	289.95	297.91	- 7.96	n.s.
Nagarao	18	287.44	260.75	26.69	n.s.
Milaor	20	293.58	182.67	110.91	0.01
Goa	24	256.24	235.92	20.32	n.s.
Iriga	11	304.54	348.75	- 44.21	n.s.
Total	112	P286.49	P239.23	P 47.26	0.05

<sup>a</sup>The t test for the difference between means was applied.

The tendency to underspend was especially strong in two districts, Sipocot and Milaor. In Naga and Iriga the net tendency was toward overspending, but not notably so.

Using the phrase "net tendency" should remind the reader that the average difference between loan and expenditures (L-S) is precisely that, an average. It is composed of a variety of individual differences, some representing underexpenditures (S < L) and others, overexpenditures (S > L). The distribution of the two kinds of departures from the amount borrowed may be summarized, this time with an added distinction by riceland type. The figures in the body of Table RSO3.07 are numbers of farmer-respondents.

It will be noted that there is a consistency here: whether one considers irrigated or rainfed farmers, the tendency is for underspenders to outnumber overspenders about three to one. Overspending occurs, but always in a minority of cases.



Table RSO3.07. M99 borrowers who reported spending less or more than the amount of their M99 loans, by district and by riceland type (Camarines Sur, mid-October 1973)

District	Underspenders			Overspenders			Total
	IR	RF	Total	IR	RF	Total	
Sipocot	6	10	16	1	1	2	18
Naga	14	0	14	7	0	7	21
Magarao	1	12	13	1	4	5	18
Milaor	9	8	17	1	2	3	20
Goa	14	2	16	7	1	8	24
Iriga	4	5	9	1	1	2	11
Total	48	37	85	18	9	27	112

On underspenders and overspenders

- C.28. The amount which farmers say they spent for seeds, land preparation, and transplanting never agrees with the amount they received for these purposes through their M99 loans.
- C.29. Overall, and in the districts of Sipocot and Milaor, the differences between loans received and money spent are significant.
- C.30. Underspenders outnumber overspenders three to one. However, overspending and underspending are not significantly associated with farmers assisted by either PTOs or PTNs. PTN-assisted farmers are just as likely to underspend as those assisted by PTOs.<sup>18</sup>

<sup>18</sup> We are grateful to Reynaldo de Sagun, senior agricultural economist, PPD/BRBC-PO, for suggesting this test. Another test, suggested by Perfecto Bragais, Jr. (TAG) and Leonardo V. Dayao, Jr. (PPD/BRBC-PO), shows that underspending is not significantly associated with the use by M99 borrowers of their own seeds (i.e., non-purchase of seeds), and of exchange labor for land preparation and transplanting. Among underspenders, 45 percent bought seeds, 79 percent used cash to get their land prepared, and 97 percent did likewise

M99 loan repayments (for Phase I). What is the loan repayment rate of farmers who borrowed in Phase I of the M99 program? In a report dated September 19, 1974, Mr. Nicanor S. Clasio, MFAC provincial program officer, revealed that 72 percent of the Phase I M99 loans in Camarines Sur had been repaid as of August 31, 1974. However, the Clasio report did not distinguish repayments by kind of riceland. Since the credit institutions themselves (the PNB, rural banks) likewise make no distinction by kind of riceland in their repayment records, the SSRU conducted a special study for the purpose.

A total of 129 farmers, all of whom were QL1 respondents, composed the sample. Each of the respondents had reported getting an M99 loan, and had worked either an irrigated or rainfed parcel.

Data on the repayment rate by type of riceland were gathered on September 30, 1974, during a seminar-conference attended by M99 Production Technicians. A total of 24 technicians, named by QL1 respondents as their PTs in Phase I, were asked to indicate in a special form the loan status, as of August 31, 1974, of the farmers who had procured production loans under their technical advice. The findings are in table RSO3.08.

Table RSO3.08. Repayment rate of farmers with M99 loans, by type of riceland, by status of repayment (Camarines Sur, September 1974)

Riceland type	M99 loan status as of August 31, 1974 <sup>a</sup>			Total
	Fully paid	Partly paid	Unpaid	
Irrigated	75%	17%	8%	80
Rainfed	51%	22%	26%	49

<sup>a</sup> Loans were for Phase I (May-October 1973)

Chi-square = 10.499      df = 2      p < 0.01

for transplanting purposes. Among overspenders, 43 percent reported cash expenditures for seeds, and 93 percent, for land preparation and transplanting respectively.

On M99 loan repayments

- C.31. As of August 31, 1974, 72 percent of the value of Phase I M99 loans had been repaid.
- C.32. As of the same date, about three-fourths of irrigated and one-half of rainfed farmers had fully repaid their loans; another 17 and 22 percent, respectively, had repaid their loans in part.
- C.33. Farmers assisted by PTOs were repaying their loans faster than those assisted by PTNs.

The loan repayment rate of PTO- and PTN-assisted farmers was very nearly the same as that of irrigated and rainfed farmers, respectively. As of the same date, 73 percent of PTO-addressees and 52 percent of those advised by PTNs had fully repaid their loans; 19 and 21 percent, respectively, had made partial payments.<sup>19</sup>

CONCLUSIONS

There is in each of the 33 findings reported here a particular factual message. Read one by one, these findings are a catalog of deeds and data, a record of things observed, and little more. But we now consider them all in combination, and ask what meaning the totality may have relative to the government's desire to improve levels of living in the rural Philippines. More concretely, the questions are these: To what extent was Phase I of the Masagana 99 program a success in Comarines Sur? Further, in light of the findings, what policies or procedures may need re-examining, rethinking, and possibly reshaping?

<sup>19</sup>This finding likewise arose from comments contributed by Reynaldo de Sagun. We wish to acknowledge as well the suggestions and insights offered by Benjamin V. Gaon, Deputy-director, PPD/BRBC-PO; this report benefited from them.

To begin with, it seems undeniable that Phase I left much to be desired. It is true that significant favorable differences occurred between M99 and Non-M99 farmers in the awareness (Findings B.11-12, 15) and practices (B.13-14, 16) of modern techniques and in size of harvests (see Report Series, No. 2). It is also a matter of record that credit and fertilizers generally reached M99 borrowers when they needed them (C.26-27),--and that the loan repayment rate has been relatively good (C.31-33).

On closer examination, however, these creditable accomplishments seem less striking. Thus, though the average M99 farmer raised more palay per hectare than others did, the difference was significant only for rainfed parcels; on irrigated riceland, M99 and Non-M99 farmers did about equally well. Moreover, the overall average harvest for M99-assisted parcels was only 59 cavans per hectare, about three-fifths of what was expected--or advertised. In the area of technique awareness a further qualification is called for: the superiority of M99 farmers in this regard was much less notable for irrigated than rainfed farms (B.12, 14). Indeed, the greater awareness of these farmers was traceable to M99 production technicians in only about 50 percent of cases (B.15, 18); non-PTs, mostly private individuals, deserve equal credit for the good record of M99-assisted farmers. The Communication Fidelity scores of PTs confirm the fact that their activity in this sphere was less than highly efficient (B.17, 20).

Clearer evidence of the deficiencies of the program are found in the semi-official statement, cited earlier, that certified seeds were in short supply, and that arrangements for the transport, storage, and marketing of palay could not be implemented as planned.

As well, consider how rarely farmers were involved in constructing their farm plans and budgets (B.21-22), how uneven was the PTs' knowledge of the M99 delivery structure (A.3-4, 6-8), and how relatively lacking in perspective were the PTs' views of the government's major rural programs

(A.9-10). The widespread pattern of reported underspending (C.28-30) suggests that most M99 borrowers were getting more cash than they needed, or using less of it for farming than they should have. And this in turn makes one think of inappropriate FPBs, careless supervision of inputs, or some other such failure on the part of technicians.

Yet despite these many lapses, and despite the real differences discovered in the performances of veteran and novice PTs (A.3-4, B.23), the agency ratings of technicians were uniformly bland and highly complimentary, showing no correlation with more behavioral scores (B.24-25). In view of all these facts, and despite its minor triumphs, Phase I of the M99 program in Camarines Sur must be declared something less than a booming success.

Like causes, possible remedies. It is easy to find fault with an enterprise as ambitious as the M99 rice-production program, especially in its earliest months. But what about the causes of what we have observed? Can they be identified?

Administrators whose agencies are criticized, however indirectly, in this report will know far better than we what went wrong in Phase I and what must be done to correct the difficulties we have mentioned. PTs obviously need reminding about the importance of involving the farmer in his FPB, for example, and the MDOs--all MDOs--should take a more direct interest in, and be more knowledgeable about, government programs other than the Sagahang Mayon.

It is our feeling, however, that these remedies, indicated though they are by the evidence at hand, will result only in a band-aid patchwork. They will not cure the underlying problem. For we believe that even if every M99 technician in Camarines Sur were working at top efficiency the combined efforts of all these dedicated agents could not cope with the task that confronts them. At the present ratio of one technician for every 200 hectares, PTs are simply too few in number to do the job expected of them.<sup>20</sup>

<sup>20</sup> See footnote 4, above.

Does this mean that the answer to Phase I's problems is the mere multiplication of production technicians? We think not. Even if funds were available (they almost certainly are not) to increase the Phase I number of PTs twenty-fold, and so bring the ratio down to 1:10--close to the ratios of Japan and Taiwan when they made their breakthroughs in agrarian reform--the problems of supervision would predictably be so complex that they would offset the benefits of more frequent and more meaningful PT-farmer interaction.

There must be some expansion of the PT corps, we believe, but above all there must be a transformation of the present technical-assistance formula, a shift toward a new kind of production technician. We suggest that the agency-centered PT, responsible to his superiors in the bureaucratic hierarchy, might profitably be replaced by a home-grown, home-picked production manager who will answer to neighbors and barriomates for the success of their crops, and may even derive his livelihood from a portion of the surplus that his skillful help has brought them.<sup>21</sup> Given the small size of the average riceland parcel in Camarines Sur (one hectare), a formula such as this seems to be a reasonable and (on general principles) desirable answer to the need for on-the-scene expert assistance and supervised credit. It certainly seems worth trying on an experimental basis.

Beyond and above the production-technician question there is what we consider an even more comprehensive problem. This is the way in which the government's rural programs are viewed relative to one another. With the one

<sup>21</sup>In Taiwan, where the technician: hectares ratio is 1:6, many technicians are supported by the farmers they serve. That the same system might be acceptable in the Philippines is suggested by an existing parallel. Filipino farmers in Cavite voluntarily pay for the services of a "water guard," who looks after the irrigation interest of his employers (Coward 1972). The local production manager we have in mind would be a kind of super production leader, chosen by his own social allies to look after their farming interests.

very significant, but vaguely conceived, exception of land reform, these programs (notably Masagana 99, compact farming, and the Samahang Nasyon) are perceived either as ends in themselves, on the one hand, or as mere helping hands for other programs, on the other. The evidence we collected indicates that the government agents most closely involved in a program tend to exaggerate its importance, while those whose official commitment is elsewhere are likely to play it down. The result is parallel, unfocused activity, and a defending of programs mostly because they are there and they are ours.

There is need, we believe, for a statement, or restatement, of the hierarchy or objectives--ultimate, intermediate and immediate--that are sought by the government's rural programs. This explicit ordering of ends is needed not because of confusion about the ultimate goal; almost everyone would define this in terms of a better and more humanly satisfying life for the average farmer and his family. The problem is with the intermediate and immediate objectives. Concretely, should cooperatives, or cooperative living, be billed as the major means to happiness, the goal that gives direction and force to the rural population? Or should agrarian reform, broadly conceived, play this role? Because most government agents, regardless of affiliation, see themselves (however vaguely) as working towards agrarian reform (A.9-10); because the average farmer places land reform far higher on his list of priorities than cooperatives (Report Series, No. 1); and because the Code of Agrarian Reforms clearly makes cooperatives a means to the attainment of this reform, we judge that agrarian reform deserves the honor. However, our opinion aside, let the hierarchy of goals be clarified, and soon.

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