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Analysis and Evaluation of Korean Dairy Cattle Project  
Special Emphasis on Project Implementation

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A Research Paper

Submitted in partial fulfillment of  
the requirements for the degree of  
Master of Science

Department of Agricultural Economics  
Michigan State University

1975

- - - Contents - - -

Summary	iii
I. Introduction	1
A. Problems and Situation	1
B. Objectives	2
C. Procedures	2
II. Development and Implementation of Dairy Cattle Project	4
A. General Pattern of Policy Development and Implementation	4
B. Development and Implementation of Dairy Cattle Project	7
III. Analysis of Dairy Cattle Project	11
A. Farm Management Analysis of Dairy Cattle Project	11
B. Further Analysis for Project Implementation	12
IV. Evaluation of The Project and Concluding Remarks	23

- - - Tables - - -

1. Milk Production per Cow	12
2. Operating Cost per Cow by Herd Size	13
3. Occupational Background of Managers Before Starting Dairy Farms by Size	15
4. Side Line Businesses Other Than Dairy Farming by Size	16
5. Total Investment by Different Sources by Group	17
6. Amount and Sources of Capital by Dittie Size	18
7. Area of Pasture Land and Feed Land by Size	19
8. Composition of Pasture Land by Source of Acquisition by Group	20
9. Composition of Feed Land by Source of Acquisition by Groups	20
10. Feed Utilization of Sample Herds by Size	21

Summary

This paper attempts to analyze gaps between policy goals and policy results realized through process of policy implementation, and to investigate the obstacles which make such gaps. Generally, policy goals are set up by central government with ambitions and detailed instruction, however, policy results turn out unsatisfactory when policy is implemented through central and local government units. In connection with such happenings, a case study of a dairy cattle project in which a policy goal was to increase farm income, and policy results came out with 1) a large number of farms terminating their participation soon after they joined the project, and 2) poor farm management results among farms remaining in the project.

Major focus was given to the types of individual dairy cattle farms accomplishing the best farm management results. Secondary focus was on how to assign the project to the most feasible dairy cattle farms. The best farm management results in amount of milk produced per cow, operating cost per cow, and income per cow were accomplished in the relatively smaller cattle size farms. Larger cattle size farms showed poor farm management results. Smaller size farms are mostly composed of farms which joined the project by shifting their resources from other farm enterprises to dairy cattle enterprise. On the other hand, most of the large size farms are composed of newly developed farms mostly by people who have no experience in farming. Smaller size farms try to accomplish the best farm management results by maximizing efficiency in their resource utilization. On the other hand, large size farms have a tendency to secure a large area of land with a huge amount of money, and then not use the land intensively. In the analysis it was shown that large size farms are more interested in value of their land be raised

rather than expecting profits from operating their dairy cattle farms. They joined the dairy cattle project and purchased a large area of land as an investment alternative.

The analysis raises the question of how to assign the project to the best feasible farms. Generally in assigning the project to dairy cattle farms, project people pay much attention to the feasibility of prospective dairy cattle farms in such physical aspects as size of land, amount of capital, and size of farm machinery, and do not consider managers' background and intention for serious dairy cattle farming. It is shown in the analysis that managers who have farming background and a real intention for dairy cattle farming accomplish good farm management results even though they are inferior in the physical aspects of feasibility, while managers who secured a large area of land as an investment alternative accomplished poor farm management results and stopped their business early in spite of their superior resource endowments. Therefore, it would be more desirable to assign the project to the farms which have a real intention to remain in dairy cattle farming to accomplish better farm management results and project implementation as a whole.

I. Introduction

A. Problems and Situation

In most cases the policy-making process in Korea operates well. Agriculture policies are generally well conceived and formulated. In some cases, however, the results of policy implementation are not as intended by original policy designers. The general problem addressed in this paper is the reason for the gaps between policy goals and policy results. For purposes of the study the policy goals will not be questioned. The focus will rather be on analysis of the extent to which the implementation of the policy achieved the originally established policy goal.

Before the Third Five Year Economic Development Plan, which began in 1971, the agricultural sector had been relatively stagnated, and little governmental attention was directed toward the problems of the agricultural sector, and relatively few agricultural policies were made and implemented through national and/or local governmental units. Sometimes the original policy goals were not accomplished because of an inadequate process of policy implementation. Little attention or interest has been paid to such poor results of agricultural policies. As a result a large portion of farms which originally joined projects designed to increase incomes have terminated their participation. Reforestation projects have been plagued by the disappearance of pine tree seedlings due to lack of proper management and supervision. Sericulture projects have been abandoned due to inadequate labor supply after mulberry trees have been planted and worm keeping houses built. Numerous other examples can be cited.

In contrast to the situation before the Third Five Year Plan more emphasis is now being placed on development of the agricultural sector. An increasing number of agricultural policies are being developed and implemented by the national and/or local governments. But as experienced in the past, poor results of agricultural policies are often achieved through poorly designed processes of implementation. Unlike the situation in the past, the poor results are more serious since more money and manpower are being allocated to support the goal of agricultural development.

### B. Objectives

The objective of the study is to analyze the reasons for gaps between goals and results of policies, and to establish a possible standard practice for planning policy implementation. A case example is developed which describes an income increasing policy implementation as it was carried out and as it might have been accomplished. Hopefully it will be a useful demonstration to people in charge of policy implementation at various levels in the Nigerian Government.

### C. Procedures

This study is specifically designed to analyze a case in which the policy goal was to raise farm income through government-supported projects, which were implemented at all levels of governments but at the end of the policy period the results were unsatisfactory. In this specific case the policy goal was transformed to the policy result through processes of policy implementation, and resulted in some gaps between the policy goal and the policy result. This case can be extended to any case of government-supported policy



projects which end with similar results. In order to pinpoint a specific case, an example of a dairy cattle project which was initiated and implemented under the full support of central, provincial and local governments, where policy results came out unsatisfactory is raised. In developing this paper, the first step is to examine the project already done mostly in view of farm management results of individual farms, and to investigate which types of farms accomplished good results or poor results. The second step is to investigate the best way to find the optimal areas or farms for dairy farming, that is how to assign the project to the most feasible farms.

## II. Development and Implementation of Dairy Cattle Project

### A. General Pattern of Policy Development and Implementation

In most cases the goal of agricultural policy-making is to raise farm income through increased agricultural production. The Special Project for Farmers' and Fishermen's Income Increase which was developed at the Ministry of Agriculture and Forestry by instruction of the Blue House (the official residence of the president) is a good example of an agricultural policy which is aimed at increasing farm income through increasing farm production. The original idea of the project was based on the national goals of farm income and food production increases, and the project was developed as a means of attaining such an urgent national goal.

In order to accomplish the general national goal of increasing farm income and farm production, the ministry tried to develop the most effective policy means. The policy means should be the most effective one in the sense that it is not only to create increased farm production but also to contribute to direct individual farm income increases with the least resources and time spent. In consequence the most widely used policy means in the project is to let individual farms in the selected areas plant or raise selected crops or livestock which are considered most profitable and feasible under intensified government financial and technical support and supervision. The crops and livestock as a policy means are selected on the basis of the results of research and experiment. These items range from crops and livestock such as mushroom, tangerine, chestnut, Korean Cattle fattening, and dairy cattle to marine products such as oysters and clams. The ministry regards these commodities as strategic items for the project, and then

establishes uniform guidelines for policy implementation such as how to generate funds, how to support funds and materials for farms, how to advise farmers through the extension system, how to support the marketing of their products, etc. for individual commodities.

With uniform guidelines for policy implementation of each commodity established at the field level by the ministry, the local option extends only to assignment of projects to alternative feasible areas for actual implementation. Because the ministry does not want a regional income gap due to regionally unbalanced government supported projects, in most cases the ministry allocates the single projects to provinces proportionally to population or size. Also the ministry selects a wide range of strategic items in order to avoid unfeasibility of a single item in certain areas. Some political reasons are also taken into account for such balanced allocation of single projects for each province. If some regions are considered traditionally low income regions, the ministry places priority in allocating single projects in order to avoid regional income gaps.

In allocating a single project to a province, the ministry is generally not responsible for the feasibility of single projects for individual areas. The ministry allocates a wide range of single projects to each province on a rough basis of feasibility in order to give provinces a wider range of choices. The ministry does not allocate oyster or clam projects to the provinces with no feasible inshore. Provincial and county governments are more responsible for selection of highly feasible areas for each single projects. When provincial governments allocate single projects from the ministry to local units, county, they consider also regional balances, but

they should consider feasibility of single projects more carefully.

Local governments are more responsible for the final selection of feasible areas even though they have to cooperate with provincial governments or even with the ministry in selecting feasible areas. They are not only responsible for final selection of feasible areas for single projects but also have responsibility for the actual implementation of single projects assigned from the superior organization. Local governments and local people are more familiar with the natural endowment of local areas, and thus they know what the most feasible single projects for the area. But sometimes the single projects assigned from the superior governments are not consistent with the single projects local people have in mind. Quite often local governments are required to accept single projects for which they cannot find any feasible areas in their regions. For instance, in some cases beef cattle projects are assigned to the regions where good grassland is unavailable, cocoon raising projects are assigned to the regions where no mulberry trees are available in the regions, high-quality perishable vegetable projects are assigned to the regions where no urban markets are near, etc.

These things sometimes happen because single projects for local areas are not selected at local level but assigned from the superior organization in which regional and/or political considerations are more strongly felt. Consequently local governments must sometimes use their resources to implement single projects which they are not really interested in. This thing also happens to the real participants of the projects, the farmers. In most cases farmers are familiar with the natural endowments or physical conditions of their villages or farms, and they know which projects are feasible and which

are not. It is natural that farmers are not interested in the assigned single projects if they are not feasible in their villages or farms.

### B. Development and Implementation of Dairy Cattle Project

As discussed earlier when prospective crops and livestock are being considered as strategic items for the Income Increase Special Project by the ministry, a key indicator for decision-making is information from research and experiments which determine feasibility of the project. The ministry determines only the general feasibility of strategic items for the nation as a whole, and establishes uniform guidelines for the project. Then the selected projects are assigned to provincial governments by the ministry, who in turn assign the selected projects to local governments, finally the local governments assign the selected projects to areas or farms. In the process of selection at the top level and assignment of the projects at various government levels, there is a tendency for major decisions to be made at the far superior level or one-step superior level. For example, the decisions which are best made by provincial governments are made by the ministry, the decisions which are best made by local governments are made by the provincial governments. The result is that sometimes unfeasible areas, farms, and farmers are assigned by the superior governments.

Dairy cattle have been one of the strategic items which has had a good potential for increasing farm income since the early 1960's. The demand for milk and dairy products has been growing steadily since the early 1960's because of increased per capita income and a higher level of living. Also farm management data show that dairy cattle have a good potential for high returns if reliable sources of roughages are secured and good care of the

cattle is given. Above all the fact that the total number of dairy cattle was increased from 866 in 1960 to 36,128 in 1972 reveals how the dairy cattle industry has been growing even though it owes much to strong government supports. <sup>1/</sup>

As a single project of the intensified farm income increase project started in 1968, the dairy cattle project was started in an attempt to directly increase participating farms' income and contribute to the enhancement of people's nutrition through increased production of dairy products. In connection with the overall income increase project, 4.3 billion Won was invested in dairy cattle projects from 1968-72. <sup>2/</sup> For the whole project the sources of funds are 27.5% government subsidy, 50.8% long-term loan by government, 4.6% ILO loan, and 17.3% participants' contribution. A breakdown of dairy cattle project by sources of fund is not available now. Also, the number of participating farms is 781,000 which amounts to 31% of the total number of farms in the country. <sup>2/</sup>

As most government-supported projects, the dairy cattle project has been implemented by the same rule described in the previous section. The dairy cattle project was initiated and funded by the ministry. Almost all guidelines of the project are set up at the ministry, and then assigned to the provinces. Because there are not especially good regions nor especially bad regions for dairy cattle farming in the country, achieving regional balances is more strongly considered in assigning the project to provinces. Eight dairy cattle areas were selected by the ministry, and these areas are

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<sup>1/</sup> Yearbook of Agriculture and Forestry, 1973, Ministry of Agriculture and Forestry

<sup>2/</sup> One U.S. Dollar is equivalent to 480 Won.

<sup>3/</sup> Evaluation Report of the Special Project for Farmers' and Fishermen's Income Increase, Ministry of Agriculture and Forestry, 1971.

distributed to provinces except Kangwondo (mountainous province) and Cheju-do (island). Because the size of a dairy cattle project is relatively larger in terms of funds and area needed than other projects, more inputs were given by the central and provincial governments in selecting areas. In some cases one dairy cattle area covers 2 or 3 counties, and this makes local governments weaker in the selection of feasible areas within their own boundary. In most cases dairy cattle areas are close to population centers, and three out of eight are located within the distance needed to serve metropolitan areas. That is, within the distance needed to serve metropolitan areas three projects are distributed equally by provinces.

On the other hand, unlike the other projects in which farmers in the selected areas are forced to participate in the project, dairy cattle projects gave some choices to farmers because dairy cattle are strange to most of the farmers and they require some new techniques which are different from those used in traditional farming practices. Also dairy cattle farming requires a relatively large amount of initial capital to start the business. The special nature of dairy cattle farming forced the government to allow the farms or prospective farms which had no previous dairy cattle farming experience to participate in the project if they meet the government requirements specifying size of pasture land needed, amount of own capital, number of hired labor, size of farm buildings, etc. This is shown in Table 1 which indicates that 61% of the managers of sample farms had non-agriculture-related occupations before they start dairy cattle farming. Also, as shown in Table 5, the fact that total investment for dairy cattle farming is much higher in the non-agriculture-background managers group than the agriculture-background managers group

indicates that government put emphasis on the amount of capital which is able to be mobilized by the prospective dairy cattle farms because the government believed that dairy cattle is a capital intensive industry.



### III. Analysis of Dairy Cattle Project

#### A. Farm Management Analysis of Dairy Cattle Project

Before evaluating the farm management of selected farms in the project let me point out that of the 904 farms joining the project in 1968 when it first started only 387 farms were still operating when a research unit of the Agricultural Economics Research Institute, Ministry of Agriculture and Forestry started the survey in January 1970. Also, according to the survey, farms in the project showed poorer results in such farm management indicators as average milk production per cow, operating cost per cow, and net income per cow than the national average for dairy cattle farms. The survey indicated large variations in these farm management indicators among farms in the project. Based on the above even superficial information with respect to the farm management of selected farms in the project, I would say that my point of analysis of farm management and policy implementation of the project would be 1) what are the major characteristics of farms which achieved good results of farm management on the basis of individual farm management, and 2) what are the characteristics of farms which showed poor results of farm management. Also, these two questions are closely associated with the questions of, "Why did the selected farms have large variations in the farm management indicators among farms?", and "Why did two third of the farms stop within the first two years after they started?".

As key indicators for evaluation of the policy implementation of the dairy cattle project, farm management data of selected farms in the project will be used. Farm management data of the selected dairy cattle farms in the project were collected from 108 farms out of 327 which were continuing farming operations for the period of January 1, 1970-December 31, 1970 by the

special survey team of the ADHI. The summary of farm management data can be shown in terms of amount of milk produced per cow, operation cost per cow, and net income per cow from dairy cattle farm operation.

Table 1. Milk Production per Cow

<u>Herd Size</u>	<u>Milk Production</u>	<u>Number of Farms</u>
Less than 3	3,670 kg	17
3-10	4,150 kg	42
10-25	4,000 kg	30
Over 25	3,500 kg	19
<hr/>		
Average and Total	3,770 kg	108

Source: "Survey Report on Resource Use on Newly Established Dairy Farms", ADHI Research Report 15, February 1973, ADHI

According to the survey result, average annual milk production per cow is 3,770 kg for project herds. This is much lower than that of national average, 4,360 kg. This can be further broken down by size. According to the survey results, the 3-10 herd size farms showed the highest milk production, 4,150 kg. The farms raising less than 3 cattle showed average milk production of 3,670 kg. On the other hand, the farms raising the 10-25 cattle and over 25 cattle showed average milk production of 4,000 kg and 3,500 kg respectively. The farms raising a very small number of cattle or a very large number of cattle showed lower average milk production.

The next interesting result of the farm management survey is the per cow operating cost, how it varies with size of farms, and the major items in the operating cost. These results would be good indicators for the

evaluation of farm management of selected dairy farms. According to the survey results, the farms raising less than 3 cattle showed an annual operating cost of ₩172,400 per cow, and the farms raising over 25 cattle showed the lowest operating cost per cow (₩162,100 won). On the other hand, the farms raising 3-10 cattle size showed operating cost of ₩174,100 annually, and the farms raising 10-25 cattle size showed the highest operating cost of ₩176,000. Major components of operating cost are feed and labor. Cost for concentrates are much higher than that of roughages, and distribution of feed cost by herd size is almost the same.

Table 1. Operating Cost per Cow by Herd Size

<u>Cost Items</u>	<u>Less than 3</u>	<u>3 - 10</u>	<u>10 - 25</u>	<u>Over 25</u>	<u>Average</u>
	----- thousands won <sup>1/</sup> -----				
Concentrates	61.1	65.0	64.9	59.8	63.0
Roughages	33.0	33.5	37.5	34.8	35.1
Depreciation	15.5	14.6	14.2	15.4	14.9
Building	5.2	5.4	6.1	7.4	6.5
Farm equipment	5.6	6.3	6.1	6.4	6.3
Veterinary	11.5	7.4	5.4	4.7	5.7
Materials	6.4	4.5	3.4	5.3	4.9
Hired labor	34.1	34.4	38.4	37.5	32.0
<b>Total</b>	<b>172.4</b>	<b>174.1</b>	<b>176.0</b>	<b>162.1</b>	<b>168.5</b>

<sup>1/</sup> 480 won is equivalent to one U.S. dollar.

Source: "Survey Report on Resource Use on Newly established Dairy Farms",  
Kouf Research Report 45, February 1978, ASA-I

My third point of interest would be the net income from dairy cattle farming

operation which can be obtained by subtracting operating cost from gross income. According to the survey results, average annual net income per cow from the selected farms is ₩34,100, a figure much lower than that of the other dairy cattle farms in Seoul vicinity (₩62,000)<sup>1/</sup>. According to the breakdown by cattle size, farms raising 3-10 cattle showed the highest annual net income per cow of ₩53,200, while farms raising less than 3 cattle showed a net income of only ₩2,900 per cow. The farms raising 10-25 cattle size showed ₩40,000 of net income per cow, and farms raising over 25 cattle showed ₩4,900 less of net income per cow. As shown above, there are big variations in annual net income per cow by herd size. It varies from only ₩2,900 for farms raising less than 3 cattle to ₩53,200 for the farms raising 3-10 cattle size.

Based on the above superficial analysis of farm management for limited indicators, I would say that higher milk production per unit and lower operating cost per unit might be key factors for successful farm management for individual farms. And it might be a key factor for successful implementation of agricultural policy. Hence, my points of interest would be 1) why the selected farms in the project showed poor results in terms of milk production per unit, operating cost per unit, and net income per unit than the national averages, and 2) why there are such large variations in farm management indicators among farms in the project. One other point, worth investigating, is why so many farms went out of business by the time the survey was taken.

My first attention in analyzing farm management of individual farms and/or

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<sup>1/</sup> "Survey Report of Dairy Cattle Farming in Seoul Vicinity Area", 1963 National Agricultural Cooperative Federation, Seoul

policy implementation will be the internal environment which determines the success or failure of farm management and/or policy implementation. Among major components of internal environment surrounding individual farms, primary emphasis will be given to such factors as land, capital, labor, and management. In this paper, as I indicated earlier, my points of interest are why the indicators of farm management of farms in the project are worse than those of other farms in the country, and why there are such large variations in the results of farm management among farms in the project. This has some connotation on the idea that how different internal factors such as land, capital, labor, and management are endowed and utilized among farms, and how these are related to the different results of farm management. Consequently, the endowment and utilization of internal environmental factors are considered one of the important elements deciding success or failure of farm management and/or policy implementation.

Table 3. Occupational Background of Owners Before Starting Dairy Farms  
by Size

<u>Cattle Size</u>	<u>Agriculture</u>	<u>Non-Agriculture</u>	<u>Total</u>
Less than 3	8 (42.1%)	11 (57.9%)	19
3-10	23 (41.8%)	32 (58.2%)	55
10-25	7 (33.3%)	14 (66.7%)	21
Over 25	2 (15.4%)	11 (84.6%)	13
Total	40 (36.1%)	68 (63.9%)	108

Source: "Survey Report on Resource Use on Newly Established Dairy Farms"  
ABRI Research Report 45, February 1972, ABRI

As a part of investigation of how sample farms are endowed and have utilized

their resources, analysis will include how the sample dairy cattle farms were established and started their business. According to the survey results, manager of 68 farms out of 108 sample farms started their dairy cattle business from lines of business outside of agriculture. The other 40 managers shifted their business from other lines of agriculture to dairy cattle business. Portion of non-agriculture-experienced managers is positively correlated to farm size in terms of number of cattle. A relatively large portion of agriculture-experienced managers can be seen in the smaller sized farms. The occupational backgrounds of the 68 non-agriculture-experienced managers were: government employees, 27; business, 24; wage and salary earners, 8; and other, 9. This gives a rough idea of the background of those who started into the dairy cattle business from lines of business outside of agriculture.

Table 4. Side Line Businesses Other Than Dairy Farming by Size

<u>Size</u>	<u>Other Lines of Agriculture</u>	<u>Non-Agriculture</u>	<u>Dairy Farming Only</u>
Less than 3	24 (73.7%)	5 (26.3%)	-
3-10	32 (40.0%)	30 (36.4%)	13 (23.6%)
10-25	2 (9.5%)	11 (52.4%)	8 (38.1%)
Over 25	4 (30.6%)	7 (53.8%)	2 (15.4%)
<b>Total</b>	<b>42 (38.9%)</b>	<b>43 (39.8%)</b>	<b>23 (21.3%)</b>

Source: "Survey Report on Resource Use on Newly Established Dairy Farms", ADRI Research Report 45, February 1972, ADRI

Forty three out of the 108 farms were operating side line businesses outside of agriculture. This characteristic is positively correlated with

farm size. Among the surveyed farms only 23 were specialized in dairy cattle business, and the number of farms specialized in dairy cattle business gets smaller and smaller as farm size grows. From the above it can be inferred that non-agriculture-experienced managers who are operating relatively large size dairy cattle farms have a tendency to run more and more side line businesses outside of agriculture, and smaller size farms mostly operate other lines of side line business within agriculture. In general, it can be said that most non-agriculture-experienced managers are ready to quit their business whenever alternative past are more profitable than dairy farming are found. But, agriculture-experienced managers try to improve their dairy farming through improved farming with side line businesses considered to be a complementary means for increasing their farm income.

Table 2. Total Investment by Different Sources by Group

<u>Groups</u>	<u>Total Investment</u>	<u>Own Fund</u>	<u>Government Subsidy</u>	<u>Unit: Thousand Dollar</u>	
				<u>Government Loan</u>	<u>Private Loan</u>
Non-Agriculture	3,958	3,073 (77.5%)	975 (24.6%)	3,708 (93.7%)	250 (6.3%)
Agriculture	3,073	1,658 (53.9%)	1,415 (45.9%)	1,619 (52.7%)	454 (14.8%)

Source: "Survey Report on Resource Use on Newly established Dairy Farms", ARII Research Research Report No. 45, February 1976, ARII

According to the survey results, there are big differences between two groups of dairy farms in total amounts of capital invested for dairy cattle farming. If this information is further broken down by sources of capital between the two groups, even though there are no big differences in terms of percentages among the four different sources of money between two groups, we can find big differences in absolute amount of money supplied by each source between the two groups. Non-agriculture-experienced managers were

able to mobilize over twice as much money as the agriculture-experienced managers. This fact can be further supported by the information from Table 6. Table 6 shows that as farm size grows, total amount of capital invested for dairy farm increases rapidly. And the proportion of money from their own sources increases with size of herd. The amount of money from sources other than their own pocket, such as government subsidy, government loan, and private loan increase in absolute amount as farm size grows, however, their proportion decrease.

Table 6. Amount and Sources of Capital by Cattle Size

Unit: Thousand Men

<u>Size</u>	<u>Total</u>	<u>Own Money</u>	<u>Gov't Subsidy</u>	<u>Gov't Loan</u>	<u>Private Loan</u>
Less than 3	1,338	171 (12.8%)	123 (9.2%)	643 (48.1%)	18 (1.3%)
3 - 10	2,906	1,226 (42.2%)	376 (12.9%)	1,236 (42.7%)	67 (2.3%)
10 - 25	8,492	2,642 (31.1%)	1,211 (14.3%)	4,235 (49.9%)	100 (1.2%)
Over 25	30,692	16,225 (52.9%)	2,619 (8.5%)	11,771 (38.2%)	76 (0.2%)
Average		3,132 (44.5%)	732 (11.2%)	2,983 (42.5%)	123 (1.3%)

Source: "Survey Report on Resource Use on Newly Established Dairy Farms" ASRI Research Report No. 45, February 1972, ASRI

It is clear from the above information that urban people have easier access to large amounts of money from institutional and private sources than rural people. So, they were able to invest larger amounts of money on their dairy farms than the rural people who simply shifted to dairy cattle business from other lines of agriculture. Most large size farms are more dependent on their own money sources than smaller size farms. On the other hand, smaller size farms are more dependent upon such sources of money as government loan and subsidy. It can be said that most of the urban people without experience



in agriculture that joined the project provided a large amount of their own capital in the expectation of good returns on their investment. Even though information on the sources of non-agriculture-experienced managers' own money is not available, we can conjecture from information on their previous occupations that their money comes from severance pay of government employees or wage and salary earners or sales of business properties.

Table 7. Area of Pasture Land and Feed Land by size

<u>Size</u>	<u>Pasture Land</u>		<u>Feed Land</u>	
	<u>Per Farm</u>	<u>Per Cow</u>	<u>Per Farm</u>	<u>Per Cow</u>
	----- One tenth hectare -----			
Less than 3	23.6	11.3	6.6	0.5
3 - 10	51.4	9.0	20.9	3.3
10 - 25	181.6	12.4	93.1	2.3
Over 25	405.9	6.1	102.1	2.0

Source: "Survey Report on resource Use on Newly Established Dairy Farms", Agricultural Research Report 45, February 1972, AAU.

These urban people started their business not only large in terms of number of cattle, and amount of capital but also in terms of areas of land for pasture and feed. As shown in Table 7, the area of pasture land and feed land increased rapidly as farm size grows. Also as shown in Tables 8 and 9, the rate of newly purchased pasture land and feed land is very high in case of urban managers who had no experience in agriculture before they start dairy farming. This means they spent a large portion of their capital for purchase of land as well as purchase of cattle. Also, this leads to the assumption that the expenditure of more for land than for cattle indicates they expect more return from land than from cattle raising and other farm

Table 8. Composition of Pasture Land by Source of Acquisition by Group

<u>Group</u>	<u>Already Owned</u>	<u>Purchased</u>	<u>Wanted</u>
- - - - - one tenth hectare - - - - -			
Non-Agriculture	40.6 (38.4%)	72.9 (51.0%)	29.5 (20.6%)
Agriculture	51.1 (77.2%)	10.7 (16.2%)	4.4 (6.6%)

Source: "Survey Report on Resource Use on Newly Established Dairy Farms", ARRI Research Report 45, February 1972, ARRI

Table 9. Composition of Fodder Land by Source of Acquisition by Group

<u>Group</u>	<u>Already Owned</u>	<u>Purchased</u>	<u>Wanted</u>
- - - - - one tenth hectare - - - - -			
Non-Agriculture	15.1 (32.4%)	19.7 (55.3%)	0.8 (2.3%)
Agriculture	14.7 (72.6%)	2.6 (13.2%)	1.4 (7.5%)

Source: "Survey Report on Resource Use on Newly Established Dairy Farms", ARRI Research Report 45, February 1972, ARRI

activities. If this assumption is true, they spent more money for land because they expect more from land. The fact that area of pasture and fodder land per cow increases as farm size increases partially supports this assumption. Even though large size farms own absolutely large areas of land, their land per head is smaller than that of smaller size farms. This supports the fact that managers who have had no experience in agriculture are more interested in land rather than cattle. Also, what they really expect is the value of land to be increased rather than more milk is to be produced from their cows.

By analyzing how dairy farms utilize their pasture land and fodder land, we can draw some fact about what really interests non-agriculture-experienced

Table 10. Feed Utilization of Sample Farms by Size

<u>Herd Size</u>	<u>Feed Self-Sufficiency Rate</u>	<u>Roughage Self-Sufficiency Rate</u>	<u>Rate of Roughage Cost to Total Feed Cost</u>
Less than 3	31.7%	89.8%	35.1%
3 - 10	33.7%	84.2%	33.0%
10 - 25	33.4%	87.2%	36.6%
Over 25	24.1%	64.5%	36.9%
Average	27.7%	75.1%	35.8%

Source: University report on Resource Use on Newly Established Dairy Farms, ARS Research report 15, February 1972, ARS

managers. Most dairy farms need a large area of land for good quality farm-supplied feed. This is one of the key factors which lead to successful dairy farm management. Most dairy farms utilize their land intensively for production of good quality roughage to reduce the cost of market-supplied feed. In this sense, if a dairy farmer has secured a large area of pasture land, he would be expected to depend upon roughage harvested on his farm for most of his feed requirements. The fact that larger size farms have a larger area of pasture and feed land but show a lower rate of feed self-sufficiency (especially low roughage self-sufficiency rate) indicates that as farm size grows, farms do not utilize their land as intensively for production of good quality roughage. To put it differently, non-agriculture-experienced managers do not utilize their land as intensively for production of good quality roughage. This fact that non-agriculture-experienced managers, although owning large areas of land for farm-supplied feed, depend more heavily upon market-supplied feed than agriculture-experienced-managers indicates that

they are more interested in the appreciation of land value rather than revenue from utilization of land.

### B. Further Analysis for Project Implementation

In the foregoing analysis of individual dairy cattle farm management, the major analytical questions were 1) what were the results of farm management of selected individual dairy cattle farms in the project, and 2) what types of dairy cattle farms accomplished the best results. To answer the above questions analysis was concentrated on how individual dairy cattle farms are selected and operated. This point raises the question of how the best feasible dairy cattle farms and areas should be selected by the outside mechanism. Projects are sometimes assigned by government regardless of economic feasibility of the prospective dairy cattle project areas or farms. In other words, non-economic criteria are too strongly considered in assigning the project and selecting the areas or farms involved. For economic feasibility is one of the necessary conditions for the successful implementation of the project. In this section, focus will be given to the mechanism of assigning the project to feasible dairy cattle project areas or farms.

The first point of interest is how are sample farms influenced by the factors coming from outside farms in performing farm management of individual farms and implementing policy goals. In this paper the scope of outside factors is to be limited to 1) the network of governments' policies and/or administrative actions surrounding performance of farm management on individual farms, 2) the implementation of policies, 3) such socioeconomic factors as

input market conditions, output market conditions, storage and processing conditions of dairy products, and 4) transportation network for dairy products. Hence the problem is to select areas or farms that are the best for dairy farming, evaluated on the basis of good political and socioeconomic environments. Since selection of feasible areas and feasible farms for the project is one of the vital elements for successful implementation of policy goal and farm management, focus of analysis in this section would be "How important are the political and socioeconomic elements in farm management performance of individual farms and implementing policy goals?" Also, it is assumed in this analysis that the prospective dairy cattle project areas and farms at least satisfy the natural requirements for dairy farming. Therefore, major concern in assigning the project to prospective dairy cattle project areas or farms is how feasible are they in a sense other than natural conditions. The goal in this analysis is to assign the government-supported dairy cattle project to the farms which are the most feasible exclusive of natural conditions.

As discussed earlier, in assigning the project to the prospective dairy cattle area, government should consider such political considerations as how well the project areas are regionally distributed. Another major consideration the government should make before assigning the project to a prospective dairy cattle area is how much the prospective area should be socioeconomically feasible. In considering socioeconomic feasibility, major emphasis is given to 1) input and output market conditions, 2) transportation conditions for inputs and outputs, and 3) storage and processing conditions mostly for outputs. Market survey for dairy products requires thorough analysis of demand for dairy products. This would include

a careful survey of consumers' income, taste and diet pattern in the area, and price of dairy products and even prices of substitutes. Market survey for major inputs also requires thorough analysis of supply conditions for such inputs as feed, farm machines, veterinary services, etc. Marketing of milk should be carefully surveyed before the project is assigned to a certain area. Farm-to-market transportation conditions, market-to-market transportation conditions should be carefully considered. Storage and processing conditions for milk are also an important factor which should be considered carefully before the project is assigned to a prospective dairy cattle area.

The dairy cattle project is an economic project. Any economic project requires sound coordination between production and consumption, and for such economic activities to work soundly, firms and households involved should play proper roles as demand and supply units. In this context, if a project does not carefully consider economic feasibility, or if political considerations are too dominant in selecting project area, there will be some distortion in coordination between production and consumption of dairy products. Sometimes regional balance considerations are much too influential in the assigning of projects to provinces or regions. Markets and marketing conditions of dairy products in prospective dairy cattle area are often not considered seriously. According to the survey results, average milk sales rates of sample farms were 92.1%, and an area in the southwestern part of the country which is located in a relatively small population center showed the sales rate not exceeding 70%. This area has been considered a low income area and political considerations are strongly active in assigning the project to this area because the government intended to raise general level of income of the area through the project, however, unfeasible socio-

economic conditions for dairy farming led to poor results.

The next point is to assign the project to feasible farms after completion of selection of the feasible dairy cattle area. In assigning the project to the best feasible farms, the first possible way is to develop entirely new dairy cattle farms in the selected feasible dairy cattle area, and a second possible way is to develop dairy cattle farms by shifting resources of already developed farms to dairy cattle enterprise. In general, newly developed dairy cattle farms have a tendency to be developed by non-agriculture-experienced managers, while agriculture-experienced managers shift their resources from already developed enterprises to dairy cattle enterprise. As a matter of fact, non-agriculture-experienced managers should secure everything needed to start dairy cattle business by purchase or rent. They should purchase or rent land, they should build farm building, and they should hire farm labors, etc. All these can be done without big difficulties if they have money for doing that. Non-agriculture-experienced managers should borrow money from financial institutions or shift from sources already accumulated previously by themselves in order to start dairy cattle farming. Generally non-agriculture-experienced managers have easy access to financial institutions and they have already accumulated a large amount of money for investment alternatives. As far as money is concerned they do not have difficulties for starting dairy cattle farming.

On the other hand, if managers of already developed farms are going to shift their resources to dairy cattle enterprise and to start dairy cattle farming, things are not as simple as non-agriculture-experienced managers start dairy cattle business with massive amount of capital. First difficulties they

have to face is money problem. Mortgage value of their land is low, and usually their money accumulation is not big enough to start dairy cattle farming which requires a great deal of money compared to traditional crop farming when the farming was first started. Such farms have tendency to start dairy cattle farm at small size and try to utilize their resources at best efficiency. Feed cost is the biggest single cost item for operating cost for dairy cattle farm. As shown in the previous section agriculture-experienced managers try to minimize their feed cost by depending most of their feed on their farm-supplied feed. In contrast to the efforts of agriculture-experienced managers, in general non-agriculture-experienced managers secure a large area of land for their dairy cattle farming, because, according to Table 10, they use less farm-supplied feed, and depend more on market-supplied feed.

Farm land is one of the primary properties of farmers, and for dairy cattle farmers it is primary source for farm-supplied feed. As shown in the previous section if farm land is used other than feed land on dairy cattle farm, it can be easily conjectured that farm owners consider farm land as an investment alternative, and they are more interested in value of land than feed supply from their land. Dairy cattle farms should be located a reasonable distance from any major population center, as land close to urban population centers is rapidly increasing in price. Therefore, it can be easily inferred that most of the dairy cattle farm owners who have had no experience in agriculture previously would have dual purposes for their participation in the project. The first purpose is to run the dairy cattle farm, and the second is to wait for land value to be enhanced. The fact that they secured a relatively large area of land for their dairy cattle farms with massive



amounts of capital supports this hypothesis. Failure in dairy farming due to poor farm management and other environmental factors does not hurt them seriously if they consider their dairy cattle farming to be the second alternative.

Non-agriculture-experienced managers leave their farms without regrets for farming whenever they feel they have fulfilled their goal as a means of investment alternative or they find better investment alternative. The fact that 577 farms out of the 904 farms originally joining the project stopped their business really supports this point, and the number of such farms can be expected to increase in the future, considering results of farm management analysis of such groups of farms. This is not the place for argument for advantages and disadvantages of small-size farming and large-size farming. The important thing is that even though all other conditions for farming are satisfied unless farms are furnished with managers' good knowledge for farming and firm intention for goal achievement, all favorable conditions for farming cannot work adequately for the best accomplishment of the goal. It is clear in the above discussion that newly developed large-size farms which are mostly owned by non-agriculture-experienced managers lack such important elements and ruin the good environments given to them. In this context, farms without such elements are not believed to be farms accomplishing good farm management results and further good project implementation.

#### IV. Evaluation of The Project and Concluding Remarks

As indicated by managerial analysis based on farm management data of selected dairy cattle farms in the project, non-dairy farms shifting their resources to dairy cattle enterprises showed better farm management results than newly developed farms owned mostly by non-agriculture-experienced managers. This does not mean that farms shifting their resources from other enterprises to dairy cattle enterprises enjoy economies of scale or superiority in some aspects of the economy over other newly developed farms. In fact they are inferior in resources such as area of land owned or rented, amount of capital provided, amount of labor hired, and quality of materials and equipment used. They are superior in managerial aspects. This is not superiority obtained from modern management skills but obtained from long experience in farm practices and motivated by the managers' firm intention to remain in business.

Farming in general and especially dairy cattle farming requires a great deal of experience and spirit of good care for animals. A sound willingness for continuous farm life is also essential for successful farming. The development of new dairy cattle farms simply with massive amounts of capital by non-agriculture-experienced managers solely as an investment alternative lacks such elements. Although agriculture-experienced managers have no direct experiences in dairy cattle farming, they do have general experience in farming and they have accumulated practices over a long period of time on farms. This provides a good potential for further development toward experiences and skills required as dairy cattle farmers. Also, these types of experiences and skills are a good potential for overcoming difficulties inherent in any types of farming.

The lack of familiarity of most farmers with dairy cattle farming and the massive amounts of money required at first stage of farming led the government to believe that dairy cattle farms developed new with massive amounts of capital would perform better than smaller farms which shifted their resources from other enterprises to dairy cattle. But the problem lies in the fact that size of farm and amount of capital are not the only elements leading to successful performance of farm management and implementation of the project. A more important thing is the managerial capability of farm managers. Long farm experience and knowledge about the natural and socio-economic endowments of their farms or villages is an important source of this capability. Such things cannot be solved within the realm of uniform guidelines designed by central government for the project implementation. The more local options or responsibilities are given in project implementation, the more room for successful implementation of the project.

The general procedure for government-supported projects implemented in less developed countries is, first, to set up a uniform and often too ambitious set of guidelines for project implementation at central government, and, second, to depend too much on a large amount of money. This sometimes results in abuse of capital. Generally local people and governments do not have adequate knowledge and techniques to carry out a large-scale economic project. They do not have the capital, nor do they have the capacity for planning, scheduling, controlling and implementing a large scale development project. Such factors force the central government to do everything for local people and governments. But local people and governments know where they are, what they can do, and how they can do. These are the most important elements for planning, implementing, and evaluating any types of

economic projects. If these elements are not fully reflected in project implementation, the project will not be one in which local people and governments wish to join and work.

Another thing attracting interest is that the central government has the tendency to believe that capital is the most important factor for successful implementation of the project. It tries to secure too much money from foreign and domestic sources. They have had difficulties in securing money for implementation of the project, therefore, local people and governments have not been capable of providing an adequate amount of money for local development projects. This analysis has pointed out that money is the only element necessary for successful implementation of projects. Money which is not rooted in funds, since the money for investment alternatives of wealthy urban people, might be a harmful element in the development of a country's economy.

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