

AGENCY FOR INTERNATIONAL DEVELOPMENT  
WASHINGTON, D. C. 20523  
BIBLIOGRAPHIC INPUT SHEET

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*BATCH #16*

1. SUBJECT CLASSIFICATION	A. PRIMARY <b>Agriculture</b>	AC00-0000-0000
	B. SECONDARY <b>Education, extension, and advisory work</b>	

2. TITLE AND SUBTITLE  
**Economic knowledge and participation in farmer decision making in a developed and an underdeveloped country**

3. AUTHOR(S)  
**Felstehausen, Herman**

4. DOCUMENT DATE <b>1967</b>	5. NUMBER OF PAGES <b>30p.</b>	6. ARC NUMBER ARC <b>331.763.F324</b>
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7. REFERENCE ORGANIZATION NAME AND ADDRESS  
**Wis.**

8. SUPPLEMENTARY NOTES (*Sponsoring Organization, Publishers, Availability*)  
**(In Land Tenure Center paper no.33)**

9. ABSTRACT

10. CONTROL NUMBER <b>PN-RAA-840</b>	11. PRICE OF DOCUMENT
12. DESCRIPTORS <b>Colombia</b> <b>Decision making</b> <b>Farmers</b> <b>Information systems</b>	13. PROJECT NUMBER
	14. CONTRACT NUMBER <b>Repas-3 Res.</b>
	15. TYPE OF DOCUMENT

April 1967

LTC No. 33

THE LAND TENURE CENTER  
310 King Hall  
University of Wisconsin  
Madison, Wisconsin 53706

**ECONOMIC KNOWLEDGE AND PARTICIPATION IN  
FARMER DECISION MAKING IN A DEVELOPED  
AND AN UNDERDEVELOPED COUNTRY**

By

**Herman Felstehausen**

**All views, interpretations, recommendations and conclusions expressed  
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ECONOMIC KNOWLEDGE AND PARTICIPATION IN  
FARMER DECISION MAKING IN A DEVELOPED  
AND AN UNDERDEVELOPED COUNTRY

Herman Felstehausen\*

One of the great pillars upon which economic theory has rested from the classical period to the present has been the concept of the rational economic man. The theory contains assumptions about a generally high level of economic intelligence as well as an assumption about the distribution and use of adequate and relevant information to aid the decision maker in forming economic judgments. Recently, of course, some attempts have been made to include information variables in these models to help account for imperfections in knowledge.<sup>1/</sup>

In modern market economies we are concerned that the participants in the market are indeed well informed--that the market institutions as well as the mass media and dozens of public and private agencies devote time and effort to gathering and distributing information which will aid the buyer and seller in reaching the equilibrium price that results from atomistic competition.

This article presents a comparison in the distribution and utility of economic information among farmers in an advanced and a less developed

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<sup>1/</sup>A good review of information in economic theory is given by James E. Grunig, "The Role of Information in Economic Decision Making," Journalism Quarterly Monographs, in press.

country. Data are used from studies conducted in Colombia and the Netherlands. We propose to illustrate that the role of economic knowledge in farmer decision making is a function of two things: 1) the general education of farmers, along with their reception of a continuous supply of economic information; and 2) the ability to participate in the formulation of economic policies and programs which affect farmer incomes and successes in business operations.

The theoretical formulation of the "informed and rational man"<sup>2/</sup> has been worked out in detail and is extensively used by economists. However, in all nations, developed and underdeveloped alike, public institutions which are created for the distribution of information are also used by society to protect group interests and to restrict the free actions of buyers and sellers in defence of national policies. Many countries take measures to provide special incentives to producers, to maintain low prices for consumers, to balance budgets, to correct the balance of payments or to provide special welfare benefits to certain groups.

Also countries may demand higher output from their farmers (as is the case in Colombia) or restrict output (as has been the case in the United States). They may expect greater efficiency, a shift in what is produced, or perhaps improved quality (as in the Netherlands). While a country may easily formulate a set of national agricultural policies for the development of its agriculture the practical problem still remains

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<sup>2/</sup> The American Economic Association devoted a large part of its 1965 annual meetings to discussions of economic knowledge, published in "Papers and Proceedings." American Economic Review, 56:2: (May 1966).

of communicating these goals to the individual producers who will determine the success or failure of the programs. For this step, the level of economic knowledge of the individual farm manager is vitally important. But a high level of knowledgeability is not the only element that enters into farmer responses.

It is at this point that the classical theory of perfect information and rational behavior breaks down. As will be demonstrated again later, knowledge carries with it implications for participation in social systems. Part of the way people have of learning about policy goals is by participating in their formulation, and part of the reason compliance is achieved is because general approval was the result of some group action.

This dual nature of agricultural decision making has not been adequately described or considered in studies of information, diffusion, and adoption. The argument will be more meaningful if we look at the basic factors which a farm producer must consider in making a production decision. His decision is made up of two broad elements: 1) a set of conditions and factors unique to his farm, such as its size, capitalization, mechanization, cropping history, labor supply and managerial talents; 2) a set of conditions and factors which the farmer faces in common with other farmers in his class or region, such as market outlets, prices, tax rates, regulatory measures, wage levels, quality of roads, availability of technology and inputs, access to resources and capital, availability of schools, medical treatment, and other services.<sup>3/</sup>

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<sup>3/</sup>This definition is discussed in Herman Felstehausen, "Broadening the Definition of Farm Management," paper presented at an Agricultural Development Council seminar on "A Re-examination of Farm Management for Serving Farmers in the Developing World," June 25-26, 1965. Also available as Land Tenure Center Paper No. 7, Madison, Wisconsin, June 1965.

Studies of the diffusion and adoption of new technology, for example, have generally overlooked or ignored the second set of factors in the farm management process.<sup>4/</sup> This does not present serious limitations in the developed countries, but when the same methodology is transplanted to the developing nations it often fails to produce useful results. As Max Millikan so aptly states, it is not that what is concluded is neither right or wrong, it is just meaningless.<sup>5/</sup>

Colombia and the Netherlands provide a useful comparison for this discussion because their agricultural policy goals are different in both character and origin. In addition, the two countries provide striking contrasts in their levels of education, in governmental structure and in the distribution and use of economic information.

The principal agricultural concern in the Netherlands is to encourage better quality and more efficient production on about 40 percent of the farms located mainly in old traditional farming regions most of which have sand or peat soils.<sup>6/</sup> The concern and its resulting policies are prompted from forces at work outside, not inside, the country through Dutch participation in the European Economic Community (the Common Market). The

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<sup>4/</sup>For a review of U.S. studies, see Everett M. Rogers, Diffusion of Innovations, (New York: The Free Press of Glencoe, 1962). For Dutch studies see, A.W. van den Ban, Boer en Landbouwvoorlichting, (Wageningen: Centrum voor Landbouwpublikaties en Landbouwdocumentatie, 1963).

<sup>5/</sup>Max F. Millikan, "Policies for Promoting Agricultural Development: Report of a Conference on Productivity and Innovation in Agriculture in Underdeveloped Countries," Massachusetts Institute of Technology, Center for International Studies (1965), p. 9.

<sup>6/</sup>Landbouw-Economisch Instituut, De Nederlandse Landbouw in een Groeiende Economie, The Hague, 1965, pp. 77-78.

country needs to achieve more efficient and higher quality production of feed grains and livestock products on small farms in order for these products to sell at a profit in a market where price and quality standards are set by external supplies coming from areas where costs of production are lower.<sup>1/</sup>

The practical problem in Colombia is considerably different from that of the Netherlands. It is not very useful in analytical terms to describe Colombia's agricultural problems as one of trying to improve efficiency and quality, although this is certainly part of what is needed. The agricultural problem in Colombia can better be defined as one of the barriers in rural service structures and a lack of access of the small farmer to income producing resources.

The problem of distributing adequate economic information for rational decision making in this setting is cast in a new light: it is of secondary importance. Of primary concern is how to develop infrastructure, how to get local governments to function and how to give rural people a voice in how resources are owned and used. A whole set of institutions are either lacking or not functioning--transportation, markets, processing plants, farm supply services, schools, health facilities, a system of public records, public law, information media and democratic procedures for the selection of leaders. Added to the problem, of course, is the fact that economic information is not distributed either. In the following section these arguments will be elaborated with data from two communities--one in Colombia and one in the Netherlands.

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<sup>1/</sup> ibid., summary chapter.

The Netherlands has essentially solved its education, information, and participation problems. Colombia has not. The Netherlands, which has a long history of democratic procedures and international dealings, currently finds itself following domestic policies partially developed outside of the country, with the result that some Dutch farmers feel left out of their formulation. Yet there has been an almost immediate response by farmers. They are calling for new programs and have organized a new farmers' association.<sup>8/</sup>

The Colombian problem is clearly domestic. Rural people are constantly able to observe poverty, hunger, corrupt officials, monopolies in markets, the lack of schools and health facilities, and poor transportation systems. At the same time they are less able to do anything about these difficulties because the changes needed are often broad, institutional ones and not ones that are individually farm or information oriented. Also, the ability of the disadvantaged classes to act as a group is hindered by having rules for public behavior dictated from outside the community and from higher governmental levels.

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<sup>8/</sup>The farmers' association is called De Vrije Boer (Free Farmers). They support the Farmers Party, which in national elections early this year won seven seats in Parliament out of a total of 150. This was a gain of four seats since 1963. Keesings Historisch Archief. Amsterdam, February 24, 1967, pp. 113-116.

1. Education and Information: Two Communities Compared

The Dutch data are based on a 1963 study of the rural community of Bennekom in Central Netherlands.<sup>9/</sup> In this study 154 farm managers were tested on 28 economic items to determine their level of knowledge about farm management and marketing concepts. At the same time data were gathered about their use of information media, participation in local affairs, and the nature of their farm businesses. The 154 farm interviews were based on a complete study of all of the farms in the community.

The Bennekom region is a moderately traditional one of small farms which are not highly mechanized. The average farm size is 10 hectares (one hectare equals 2.47 acres). The land is low and fairly flat and hence needs some artificial drainage. Most of the farm area is devoted to grass or forage crops such as oats, barley, and fodder beets. The farmers keep an average of 12.3 dairy cows each, more than one per hectare of land. Dairy products provide the main source of income with hogs and pigs (average of 37.5 per farm), chickens (average 850 per farm) being the second main source.

The Netherlands serves as a good example for a test of economic knowledge in a developed country since many of the country's rural services and informational institutions have been functioning country-wide

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<sup>9/</sup>This study was carried out while the author was a Fulbright Fellow to the Netherlands in 1962-63. The Department of Rural Sociology of the Agricultural University of the Netherlands, Wageningen, cooperated. Economic Knowledge and Comprehension in a Netherlands Farming Community, Bulletin No. 26, Social Science Division, Agricultural University of the Netherlands, Wageningen, 1965.

for more than a half century.<sup>10/</sup> Also, communications are facilitated by a country which is geographically small, highly industrialized, concerned with equality in income and opportunity, and sophisticated in public administration. In the Netherlands there is a high probability that each person will receive his intended share of public services and social benefits.

Colombian farms provide a marked contrast in organization and productivity from those of Western Europe. As a part of the current studies being conducted by the Land Tenure Center in Colombia, a sample of 37 farms in the Southern part of the Department (state) of Huila were studied in the fall of 1966.<sup>11/</sup>

The Colombian study area is in the municipality of Pitalito, located at the headwaters of the Magdalena River. The municipality forms a horseshoe shaped basin surrounded on three sides by mountains. Much of the region is made up of steep foothills and low, rugged mountains full of gullies and canyons. The climate is semi-tropical and humid. Inverted land use patterns predominate, with most of the valley floor devoted to large scale beef cattle ranching, while the hillsides are occupied by peasants who earn little more than a subsistence living by growing a few coffee trees, corn, beans, sugar cane, plantains, and yuca.

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<sup>10/</sup>For example, the Netherlands has one of the oldest agricultural extension services in the world organized before 1900 among bulb growers.

<sup>11/</sup>This work was under the direction of the author, with assistance in interviewing and tabulation from Vicente Florez D., research assistant, Land Tenure Center, Bogotá.

The 37 farms were not randomly selected. They were all picked from among the hillside peasant farms which are currently receiving farm credit from INCORA or were judged by local representatives of INCORA to be prospects for credit. Of the 37 farmers interviewed 31 were using credit. Eleven were borrowers of INCORA.<sup>12/</sup>

The average size of the farms in the sample is 17.7 hectares. About half of the farm area is used for pastures, with an average of one cow per farm for home milk consumption. The farmers keep one or two horses or mules for use as pack animals since most of the farms are not accessible by motorized vehicles. Other animals include: an average of 3.7 beef animals or calves (two hectares of pasture per animal) two pigs and three chickens per farm. About five and one-half hectares (one-third of the farm area) is in crops, the main one of which is coffee. The remainder of the farm not in crops or pastures was waste land or forests.

The Dutch and Colombian farmers are similar in age and number of years of farm management experience. The heads of the farms in both samples were an average of 47 years old. The Dutch farmers had been managing a farm for an average of 17 years. The Colombian farmers had an average of 13 years of management experience. In the Netherlands, many farmers' sons live and work on the family farm until they can establish a farm of their own. Of the Colombian farmers in our samples a few were colonists who had come to Pitalito from other regions but nearly half were

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<sup>12/</sup> INCORA is the Colombian Institute for Agrarian Reform. Its main service to small farmers is a program of supervised production credit. It had started its credit program in the Pitalito area about one year before the study was made.

second or third generation local farmers who had received part or all of their land from a family member.

Many of the steep slopes around Pitalito are still in the public domain and are being claimed by colonists, who move in with little more than a machete and a match. They cut the growth and burn it in the dry season and then begin the hand cultivation of corn, beans, plantains, and yuca.

Education, our first major point of comparison, shows extreme contrast between the two groups. The Colombian farm group had an average of two years of education. However, 10 of the 37 had never attended school. One farmer had eight years of education, but he was a single case. The next highest number of years of schooling was four. The number of years of education in Colombia must be qualified because the rural schools in Pitalito, as in most rural areas, are operated on an alternate basis. It is the policy of the Roman Catholic Church, which controls most schools, to segregate by sex. In rural areas, where there are a limited number of school rooms, the boys attend in the mornings and the girls attend in the afternoons. Thus two years of schooling is really equal to about one year of education in normal terms.<sup>13/</sup> Of the 37 farmers in the sample 12 reported they could not read or write, even though some of these had attended school.

In developing economic information for this group special consideration needs to be given to their limited skills in communication. However,

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<sup>13/A</sup>. Eugene Havens, "Education in Rural Colombia: An Investment in Human Resources," Land Tenure Center Research Paper No. 8, Madison, Wisconsin, February 1965.

information is not all that is needed. They need more and better schools for their children, or the same cycle of illiteracy will be repeated again in the next generation.

The Dutch farmers, by contrast, had all completed at least six years of elementary schooling. The group as a whole had an average of seven years of education. Education beyond elementary school consisted of a few years of high school, night classes in farm management or agricultural short courses attended during the winter months.

As a part of the interview the Dutch farmers were given a test on 28 economic items to determine their knowledge. The test included concepts about credit, investments, government programs, production, taxes, insurance, international trade and economic theory.

A multiple correlation and regression computation was made in order to learn which of 18 farm and personal measures were most important in predicting economic knowledge. Level of education accounted for nearly 14 percent of the variation in test scores, more than any other variable. The 18 variables together explained 60 percent of the variability in economic knowledge.<sup>14/</sup>

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<sup>14/</sup>Felstehausen, p. 71.

The following table lists the variables with their computed beta weights and t statistics and indicates those which are significant at .05 or better.

Table 1. Measures Used to Explain Economic Knowledge Among Bennekom Farmers

Variables	t statistic	Beta weights
1. Education	4.654	.361 *
2. Level of living index	1.341	.109
3. Management practices used	-.209	-.017
4. Had bank checking account	-.006	-.001
5. Extension contacts	.214	.016
6. Market and urban contacts	-.757	-.050
7. Mass media usage	2.956	.192 *
8. Mass media exposure	-.506	-.038
9. Formal leadership	.916	.066
10. Organization participation	2.057	.214 *
11. Age of operator	.123	.014
12. Years as farm manager	-1.677	-.180
13. Male labor units on farm	1.462	.234
14. Owns milking machine	.230	.017
15. Owns tractor	2.332	.142 *
16. Size of farm	.436	.043
17. Production units per farm	-1.874	-.383
18. Production units per man	2.034	.322 *

\* Indicates significance at .05 or better

R = .77  
R<sup>2</sup> = .59

Farm management experience is also important for economic comprehension, as illustrated by the fact that the farmers did best on test items related to their farm and local market experiences. They scored highest on test items dealing with farm investments, government programs in agriculture, taxes, real estate, and insurance.

The evidence indicates that even in the absence of formal education farmers will develop some economic knowledge. The Colombian farmers were not specifically tested to obtain data comparable to those from the Netherlands, yet results from other studies in Colombia support this conclusion. Emil B. Haney,<sup>15/</sup> working in an area of small-farm agriculture in Colombia, asked a series of questions about knowledge of local agricultural marketing and service agencies. He found the general level of knowledge to be low but there was some knowledge of supply, demand, and price relationships functioning in the local market. However, almost none of the peasant farmers knew about prices outside of their community even though the area was only two and one-half hours by road from Bogotá.

Our second concern in this section is the distribution and use of information.

The Dutch farmers, while classed as somewhat traditional in the Netherlands, are in close daily contact with events around them. The Bennekom area is bordered by a national, high-speed, divided highway, giving it easy access to the main cities of the Netherlands. It is within an hour's driving time from Western Germany. Almost all of the 154 farmers had a paved rural road passing their farms. Nearly one-third of the farmers had automobiles, more than half had motor bikes, with only 11 percent limited to bicycle transportation.

A developed transportation system is essential for many information services. All of the Dutch farmers receive six-day-a-week mail delivery

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<sup>15/</sup> Emil B. Haney, Jr., "A Study of the Possibilities for Economic Reorganization of Minifundia Holdings in the Colombian Highlands" in process.

at their doorsteps. A spot check of the farmers interviewed revealed that they were receiving an average of seven pieces of mail per family per day, counting newspapers, letters, and advertising circulars.<sup>16/</sup> Almost all of the farmers received and read a local weekly newspaper. Sixty percent of the group received a daily paper. More than 90 percent of the farmers received one or more agricultural papers. Eighty-eight percent of the group received from 7 to 20 different papers and magazines on a regular basis. One-third of the farmers said they had 50 or more books in the house. The group as a whole did an average of about one hour per day of reading in the wintertime.

The Dutch farmers also received information from other sources. Of the 154 farmers, 143 had a radio in working order and 9 had television sets. There were 57 farms with telephone service. The farmers belonged to an average of four different local farmers organizations or agricultural service associations. The area was served by a local agricultural extension agent. One-third of the farmers belonged to an extension club which met periodically to hear speakers or to hold special training courses. More than two-thirds of the farmers were members of one of the country's three main political farm organizations. Many belonged to livestock breed associations, cooperatives, dairy production testing associations, a local cooperative farmers bank and other service groups. All of these organizations encouraged improvements in agriculture and were sources of at least some economic or technical information.

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<sup>16/</sup>Dutch research notes on file, Department of Agricultural Journalism, University of Wisconsin, Madison.

The Colombian farm sample presents a completely different picture. In the first place, rural transportation is so limited that many of the services discussed above are physically impossible. A rural postal system, one of the crucial informational institutions for a literate society, is essentially absent in rural Colombia. Twenty of the 37 farm families had not received mail of any kind during the previous 12 months. Mail, if it was received, came to the village centers on an irregular basis or to the municipal center of Pitalito daily, except Sunday. The 17 families which said they had received some mail within the last year reported receiving an average of 4.5 letters each during the period.

None of the farms have telephones and only two of the farmers had used a public telephone in the village centers during the past year. The average distance the families had to travel to the nearest public telephone was more than 12 kilometers.

Transistor radios were the most common form of communication media available. Of the 37 farm families, 27 had a radio, 10 did not. All of the radios were of the transistor type, imported from Japan or the Netherlands. Most had been purchased within the last three years.

Radio is considered one of the great information promises for the developing countries, but so far this has proven to be a false hope in Colombia. Colombia has about 225 radio stations to serve a population of 18 million people.<sup>17/</sup> Yet the programming consists mainly of music and

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<sup>17/</sup>Data compiled from various sources. It is impossible to obtain an accurate count of Colombian radio stations since some operate without a license, on a clandestine basis. Others have terminated broadcasting without giving public notice.

advertising. The main broadcasting station for our study area was operated from Pitalito. The station is owned and managed by several wealthy families of Pitalito. It has a staff of nine: three announcers, three technicians, and three in programming and administration. This station along with others in the area produce mainly music. Radio for a Colombian peasant is not an educational tool. It is a diversion, a way to bring music into the house. The local station produced only about five minutes of news per day. Many of the newscasts were less than one minute long. This is also true of some of the main stations in the country.

Agricultural programming on the Pitalito station consisted of reading news releases supplied by national drug companies interested in selling livestock remedies, articles from a few commercial companies, and clippings from a Spanish language agricultural magazine published in New York City. There was an interview twice a week in which local community action groups talked about their projects.

The station staff considered its most successful program to be a morning children's hour with stories, music, and discussion of school projects. The manager said the station would like to use more taped programs of education, culture, and religion supplied free through foreign embassies in Bogotá, but the mail service was too unreliable to depend on receiving the tapes on schedule. <sup>18/</sup> The station is commercial and is also affiliated with a national commercial network which provides programs for part of the day.

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<sup>18/</sup> Personal interview with the manager of Pitalito Radio, August 24, 1966.

Newspaper reading by the Pitalito sample is limited mainly to national dailies published in Bogotá, which are sent by air to the departmental capital and then carried five hours by bus to Pitalito. There are no local papers. There is a paper published in the departmental capital but none of the farmers reported reading it. Nine farmers in the sample said they had read something in a newspaper within the week previous to the interview. El Campesino, a national agricultural weekly sold throughout the country on newsstands and through the office of the parish priest, was available in Pitalito. All but five of the farmers knew about this paper and could identify where they had seen it.

Only one-third of the 37 Colombian farmers lived on or near a rural road, and some of these were accessible by motor vehicle only during the dry season. There are no paved roads within 80 kilometers of the region. One main trunk road which passes through the region is gravel and passable the year round. It is served by three to five buses per day which provide the main motorized transportation for farmers.

The farmers not living on the trunk road, had from one to five kilometers to travel on mountain trails before reaching the bus stop. This distance is usually covered on foot. Farm produce for the market is either carried or hauled on pack animals. A number of farmers told us that they limited their farm production to the amount they could market with the one or two pack animals which they owned. Additional animals could be

rented, but if the distance exceeded four kilometers the hauling cost was greater than the profit from the product.<sup>19/</sup>

The farmers were asked if they had been visited by an extension agent or technician during the last year. Thirteen said yes and 24 said no. Of those visited, all but one was receiving farm credit, nine of them from INCORA where visits by a supervisor are required. The others had been visited by an agent of the National Coffee Growers Federation.

In view of the lack of available services, transportation and information, it is not surprising that the Colombian farmers were not using modern technology. Only four were using fertilizers, 12 were using insecticides and none used weed sprays. None owned any machinery outside of hand sprayers and a small sugarcane press. All worked their land and harvested their crops by hand. All but eight hired or exchanged some labor during the year. The average wage was 85 U.S. cents per day, without meals or other benefits.

We calculated from the amount of products sold that the Colombian farmers had an average gross cash income of 410 U.S. dollars annually. The Dutch farmers, on the other hand, had an average gross farm income of nearly 4,000 U.S. dollars per year.

Health was a serious problem among the Colombian farm group. The only medical facilities in the region are in Pitalito and two of the

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<sup>19/</sup>Wierer found in the frontier area of Caquetá that it would be cheaper to send farm produce by small plane than to rent mules, except for the lack of landing strips. Karl Wierer, "Economics of Improving Marketing Organization and Facilities to Accelerate Agricultural Development in Land Settlement Areas," manuscript, Instituto Latinoamericano de Mercadeo Agrícola, Bogotá, (1967), p. 66.

villages. There is a token consultation fee for doctors' visits, the main cost of the service being borne by the national government and from revenues of state-operated lotteries. Thus the problem is more one of a lack of facilities and doctors than one of cost. The 37 farmers in the Colombian sample reported they lost an average of 53 work days during the previous year because of sickness. This means one day of every week is lost because of illness. Local doctors report that the main ailments are due to internal parasites. Next in line are respiratory diseases and tuberculosis.

The general impression given by these data will likely make one wonder how representative Pitalito is of the rest of Colombia. Other studies currently being carried on in three other parts of the country, along with four years of previous studies by the Land Tenure Center in 18 different locations, indicate that Pitalito conditions are similar to those of peasant agriculture in many other places in Colombia.<sup>20/</sup>

Colombia has an estimated 1.2 million farms. Of these, more than .7 million are less than five hectares in size. In other words, most farm in Colombia are smaller than those in the Pitalito sample.<sup>21/</sup>

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<sup>20/</sup>Land Tenure Center studies were directed in Colombia from 1962 to 1964 by A. Eugene Havens and from 1964 to 1966 by Dale W Adams. A number of Colombian publications by them and others are available from the Land Tenure Center, University of Wisconsin, Madison.

<sup>21/</sup>Comité Interamericano de Desarrollo Agrícola, Tenencia de la Tierra y Desarrollo Socio-económico del Sector Agrícola: Colombia, (Washington, D.C.: Unión Panamericana, 1966), p. 72.

The following table presents a summary of the main characteristics of the two groups described in this section.

Table 2. Farm and Farmer Characteristics of the Colombian and Dutch Sample Groups

Characteristic	Colombian Group	Dutch Group
1. Average size of farm (in hectares)	17.7	10.
2. Average number of dairy cattle per farm	1.	12.3
3. Average number of hogs and pigs per farm	2.	37.5
4. Average number of chickens per farm	3.	850.
5. Average age of farm operator	47.	47.
6. Average number of years as farm manager	13.	17.
7. Average number of years of education	2.	7.
8. Percent of farm operators who are literate	67.5	100.
9. Percent receiving daily newspaper	0.	60.
10. Percent receiving farm paper	0.	90.
11. Percent with radio	73.	92.9
12. Percent member of political farm organization	0.	76.6
13. Percent who held leadership position in agricultural organization or local government	0.	25.
14. Percent of farms visited by extension agent in last year	35.1	51.9
15. Percent with telephone	0.	37.
16. Percent of farms accessible by road	30.	100.
17. Gross farm cash income (in U.S. \$)	410.00	4000.00
18. Wage per day for farm labor (in U.S.\$)	.85	6.00

11. Farmer Participation in Agricultural Policy and Program Formulation and its Relationship to Economic Knowledge

The availability of economic information obviously depends on the existence of organized channels for its regular distribution. These channels are a product of social organization, and their ability to function depends upon the rules society uses to govern public institutions and activities.

The argument that farmers should have a voice in deciding the rules which govern the operation of service institutions is based not only on a democratic ideology but also on evidence that participation increases both the level of knowledge and the quality of rational decisions. Underlying the whole model of the use of information by the rational economic man are two monumental assumptions: 1) that the information actually arrives, and 2) that the receiver is in a position to act as a free agent in putting the information to its best rational use. In countries where democratic procedures are well established and rules of free competition are followed in business, these assumptions can be set aside. But in countries such as Colombia, where most public functions are controlled by an elite class, the assumptions are of central importance.

Raymond J. Penn puts it this way:

If we are to get far into the matter of change we should ask questions about the rules people establish controlling the relations between each other as they make economic decisions. These rules guide the actions of individuals, can furnish the procedures to resolve conflicts between them, as well as the framework to plan to carry out public programs. These rules determine to a large extent the incentives for the individual to improve his production and living.<sup>22/</sup>

Many economic concepts take on meaning (in a real sense are learned and understood) only as a result of the individual's participation in the groups and institutions where the concepts are used.<sup>23/</sup> Where this

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<sup>22/</sup>Raymond J. Penn, "The Rural Community and Its Relation to Farm Policies," draft chapter for book to be published by Iowa State University Center for Agricultural and Economic Development, Ames, February 1967.

<sup>23/</sup>Felstehausen, Chapter 1. Some leading economists are using these same arguments. Note the convincing and well presented ideas about social participation in Robert Dorfman, The Price System (Englewood Cliffs: Prentice-Hall, 1964).

participation is denied a concept has neither meaning nor value to the individual and consequently is neither learned nor understood. We have evidence in support of this from our study in the Netherlands.

The economic test of 28 items given to the farmer group was also administered to 153 high school students in the nearby town of Ede. The high school students had completed from 9 to 10 years of formal education, while the farmers had an average educational level of less than seven years. Only four of the students were from farm families, so agricultural experience was minimal.

The farmers scored consistently better than the students on economic concepts which they had developed from their farm management experience and from participation in local programs. This included concepts about governmental programs, such as subsidies and guaranteed pricing in their dairy operations, and investment and capital concepts such as inflation, compound interest, and mortgages. The farmers also had higher overall scores than the students--an average of 63 percent correct compared to 53 percent for the students.

In situations where participation was much less possible, such as questions about the organization and purpose of the European Economic Community, the students scored higher than the farmers.

The five significant variables in predicting economic knowledge from Table 1 were computed separately in a second multiple correlation and regression equation. When the effects of the five variables were considered separately the second most important factor in explaining the level of economic knowledge, next to education, was organizational

participation. These five variables alone produce a multiple R of .75, nearly as large as the R of .77 resulting from the analysis of all 18 variables.

In the Netherlands most farm organizations were established on the basis of religious denomination. This is also the case with political parties and many other organizations. All of the farmers in the Bennekom study are Protestants. Nearly two-thirds belong to the Protestant Farmers Union. Approximately one-sixth belong to independent farmers groups.

It is often said that the Dutch people are one of the most organization minded in the world. There are dozens of local organizations--many of them nationally federated--for every conceivable activity and public function. But these organizations play an extremely important role in protecting individual interests, as well as giving people a voice at higher levels in the formulation of local policies and programs.

In the Bennekom area, the farmers listed memberships in 10 formal organizations related to agriculture.

In addition, local government provides services such as roads and public utilities. Because the land is low and needs drainage a local water council has governmental powers to levy assessments against property owners for the maintenance of drainage canals, dikes, and roads. There are other informal groups such as community sports clubs, church organizations, and interest groups.

When these studies were made, farmers in both the Netherlands and Colombia were complaining of the lack of participation in the formulation of public policies. But the two cases are quite different in character.

Table 3. Percentage of the Dutch Farm Group Belonging to Each of the Local Agricultural Organizations

Organization	Number	Percentage
1. C.B.T.B., Protestant farm union	90	58.4
2. Geld. Mij. v. Landbouw (Liberal farm union)	27	17.5
3. De Vrije Boer (Free Farmers' Assn.)	1 *	.6
4. Cooperative Farmers' Bank	109	70.8
5. Local purchasing cooperative	111	72.0
6. Artificial breeding cooperative	91	59.1
7. Dairy production testing association	94	61.0
8. Farmers extension association	50	32.5
9. Livestock breed association	70	45.5
10. Farmers' aid society for work assistance due to sickness or accident	11	7.1

\* The Vrije Boer does not make its membership public. Some members of this group probably did not indicate their affiliation.

While the Colombian farmers feel they have little voice in local affairs this does not appear to be a serious problem in the Netherlands. Instead, the Dutch problem is the result of new developments in modern Europe where agricultural policy making is beginning to transcendent national boundaries. It has produced new policy making machinery in which farmer participation and representation have not yet been adequately worked out. One of the main complaints by the Dutch farmers was that new programs were being thrust upon them without their having a voice in their formulation. Reaction to these new forces took the form of establishment of a new organization called the Free Farmers Movement which advocated radical policies, would not reveal its membership, and was involved in a number of farmer demonstrations. In many ways its actions have been similar to those of

the National Farmers Organization in the United States. The president of the Free Farmers association lived in Bennekom where our study was made.

The problem facing agricultural information and service groups in the Netherlands is how to convince farmers to adopt more efficient labor practices, new technology, and different resource use to produce better quality products at lower cost in line with the demand and competition set by the Common Market. From the standpoint of economic theory we would expect that if it can indeed be demonstrated that a more efficient and productive technology exists, and that if these farmers are making rational decisions that they will make the conversions in line with the changes in market demand and price. The problem, however, is not one of simply informing the low income farmers about the new national policies and technical changes. To make the policies effective and to gain farmer support in realizing them farmers, like all other groups, will demand a voice in developing the programs which are needed to implement the policies.

The Dutch farmers played a major role in their local service organizations. One-fourth of them held some local, regional or national leadership position. Three were on the board of directors of the local bank which loans to farmers. Two were municipal councilmen. The farmers managed their own livestock associations and cooperatives.

In Colombia, participation is seriously lacking. Historically, the peasants have had few public rights. They have little voice in local government or in other local organizations or affairs.<sup>24/</sup>

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<sup>24/</sup> Harold F. Alderfer, Local Government in Developing Countries, (New York: McGraw-Hill Book Co., 1964).

The Pitalito farmers revealed no memberships in formal organizations. This is not surprising, since there are almost no organizations to which peasants can belong. There was one local credit cooperative in Pitalito for farmers and laborers, but only three of the farmers said they knew of its existence and none were members. Other credit agencies in the area were INCORA and the National Agricultural Credit Bank, both government run, and the National Federation of Coffee Growers, which is directed by commercial producers.

Catholicism is the national religion of Colombia and all of the farmers in the sample can be considered to be Roman Catholics. Some were more active in church affairs than others.

Local government provides almost no rural services, is poorly financed and is not structured to give peasant farmers a voice in its operation. The mayor is appointed by the state governor and is not from the area. The municipal council is elected locally, but elections are conducted according to a party list system which has the effect of allowing local party leaders to hand-pick the council members, the election serving mainly as a formality. In Pitalito there are no peasants or workers on the council. L. Harlan Davis found in a study in another part of the country that peasant farmers feel that local government serves little useful purpose, does not help small farmers, and would not be responsive to their needs if taxes were increased.<sup>25/</sup>

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<sup>25/</sup> L. Harlan Davis, "A Study of the Economics of the Property Tax in Rural Areas of Colombia," in process.

The population of the municipality of Pitalito is about 32,000, with approximately 10,000 living in the village of Pitalito. The municipal budget in 1966 was \$64,000 U.S., or about \$2.00 per person. Of this amount, 40 percent was used to pay local officials, with most of the rest going for maintenance costs of city streets, buildings, and public utilities. Almost nothing was spent on rural education, health, roads, and other services. The state and national governments have responsibility for education, roads, and health facilities. They had built and were maintaining the main trunk road but had done nothing on rural roads. Most of the rural schools were not receiving any assistance other than payment of teachers' salaries.

In the Netherlands, the changes most necessary are in farm structure. In Colombia, both community structure and farm structure demand attention. While farm structure can be changed through the initiative of individual farm managers, community changes are more difficult because they require group action.

The only community force which appears to be operating among peasant farmers in Pitalito at the present time is a community action effort called Acción Comunal. Acción Comunal consists of local community committees organized around community projects, such as a campaign to build a school, to build a few kilometers of road or a bridge, or to establish a small cooperative store or other business.

Acción Comunal committees in Pitalito were fairly independent. They elected their own leaders from among the membership and decided their own projects. In some communities, however, the committees are dominated by local priests or political leaders and are manipulated to suit the purposes of the elite groups.

Acción Comunal has a historical basis in Colombia and dates back to Indian times when people organized into community work bees called mingas. Acción Comunal groups, just as the mingas, depend mainly on the resources of their members. Thus, what they can do is limited. They often assign quotas for projects to all of the families living in the area to be benefited. The quotas can be paid either in work or in cash, but since the resources of the peasants are limited and the mechanisms for collecting funds are not formalized expensive projects often fail or are precluded. However, Acción Comunal groups do build many rural schools, water systems, sports fields, bridges, and rural roads. Acción Comunal is recognized by national status and is entitled to national and local funds.<sup>26/</sup> In practice, however, such funds are often not available to many communities.

The Pitalito farmers were familiar with Acción Comunal and 29 had worked on some local Acción Comunal project. One-half of the farmers said Acción Comunal was the most active organization or group in the region. One of the local leaders of Acción Comunal in Pitalito said his committee and others were discussing ways in which they could gain sufficient influence to go to the local head of the political party and try to get one of their members included in the next list of candidates for the municipal council. They knew that if a name could be placed on the list the

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<sup>26/</sup> A discussion of the operation of Acción Comunal in Colombia is given by Matthew Edel, "Federación de Juntas Comunales: Una Nueva Institución Colombiana," to be published by Ediciones de la Biblioteca Universitaria, Lima, Peru.

candidate would surely be elected.<sup>27/</sup> Such moves are obviously a challenge to the local power elite and are usually blocked.

From the results of these studies we can conclude that the value of economic knowledge in rational decision making is meaningful only in societies where the decision maker is free to act on the basis of new information. Developed nations such as the Netherlands make this possible even though facing occasional adjustment problems, such as the current one caused by participation in the European Economic Community.

In less developed countries, like Colombia, new information is not the primary shortcoming. Technical programs among the majority of Colombian farmers depend on their being able first to gain some control over the local institutions and agencies which provide them with information and other agricultural services.

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<sup>27/</sup> Personal interview with Pitalito Acción Comunal leader, August 23, 1966.