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A RECORD-KEEPING SYSTEM FOR
RURAL HOUSEHOLDS

by

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TABLE OF CONTENTS

PREFACE

This paper is being published as part of our ongoing research on farming systems in the Third World. Dr. Hatch has many years of research experience in Peru and Bolivia and is currently directing a study in Bolivia to determine the feasibility of illiterate farmers collecting simple farm management information by means of questionnaires which use graphics and symbols. This approach offers many potential advantages: (a) it may increase research/farmer cooperation by ensuring that the farmers participate directly in data collection and interpretation rather than receive results after the data are processed in the regional or capital city, (b) it may reduce cost and bias of data collection by enumerators, (c) it may eliminate the inevitable errors which creep into questionnaires that must be translated into local languages and administered by "outsiders", and (d) it might be continued without external funding after an initial pilot period.

The results of the research in three Bolivian villages will be published in about a year. Meanwhile, we want to provide our readers with this progress report because of concern over the cost and accuracy of rural surveys, and the need to help farmers keep their own records.

Neal Carpenter, Chief of FAO's Farm Management and Production Economics Division, Rome, reports that a similar pilot study is underway in Egypt. We would welcome feedback from our readers on the use of Dr. Hatch's approach in other countries in the Third World.

Carl K. Eicher, Director
Alternative Rural Development
Strategies Project

A RECORD-KEEPING SYSTEM FOR RURAL HOUSEHOLDS

Introduction

Despite the ambitious rhetoric of donor agencies encouraging "local participation", decision-making in rural development projects tends to be a process monopolized by outsiders to the exclusion of the rural household. These projects are conducted by "us"--i.e., by host-country officials, donor agency representatives, consultants, congressmen, and other non-farmers --for the benefit of "them".

A primary reason for this monopoly is the fact that outsiders control the information on which most project design and management decisions are based. Each year donor agencies spend many millions of dollars on field research to better understand the constraints facing the rural poor. The huge amounts of data generated by survey research activities each year reflect our unlimited appetite for collecting information about small farmers and their environment. However, in all this the rural household is regarded as a mere respondent--a supplier of data--never as a true participant, a primary user of the information generated. Outsiders identify the research problems, select and define the hypotheses they wish to test, design the data collection instruments, collect and process the data, and eventually publish their conclusions for the enlightenment of other outsiders. In sum, the rural poor are objects to be studied, not consulted. They are targets for outsiders' ideas and initiatives, not innovators themselves.

The information system described in these pages was designed to facilitate participation by the rural household in the collection and use of data relevant to production decision-making. The proposed system would:

- Create simplified instruments, utilizing graphic symbolism and color-coded counting chips, which would permit even illiterate rural households to collect data on their employment, production costs, income and productivity;

- Identify the rural household as the primary decision-making unit in the development process, and the first priority user of any data collected;

- Assign primary responsibility for supervision of household data collection efforts to a local resident (as distinct from an outside professional), who would be given appropriate skill training as a paratechnician;

-Require that all data generated be first processed and analyzed by each participating household, and then where appropriate by the community (group of participating farmers), before the data would be permitted to flow to higher levels for use by outside analysts; and

-Be sufficiently low in recurrent local costs (about US$18 per household per year) to allow the system to become self-financing and easily replicated to ever larger numbers of farmers and rural communities.

The Instruments

The proposed farmer-controlled data collection instruments presented here have been designed with the needs of illiterate rural households foremost in mind. It is assumed that if illiterates can learn to manage these instruments, then virtually all farmers are eligible to participate in information collection activities.

Secondly, the instruments have been designed for maximum flexibility and modularity. These features permit the participating farmer to manage data on only one crop or livestock enterprise to begin with. Subsequently, as he/she becomes familiar with the procedures for collecting and analyzing the data, the farmer is free to expand the instrument to cover additional crop or livestock enterprises (up to six), plus other farm activities, and even off-farm employment. Furthermore, the symbolism and color-coding employed by the instruments can be adapted from one country to another, and to different rural settings within the same country. Finally, the playing pieces used with each instrument cover a wide variety of crop and livestock enterprises; thus the instruments can be tailor-made to fit the specific production mix of individual farmers.

Each instrument contains a graphic symbolism component and a numerical accounting component. The symbolic component is always completed by the rural household. As for the numerical component, in the case of illiterate households it is the responsibility of a paratechnical supervisor or outside technician to translate from graphic-counts into quantity, price, and total value numerical estimates. With literate households, it is the supervisor's objective to teach at least one member of the family to manage both the symbolic and numerical components of the instrument by the end of the first production cycle. Supervisory visits to each participating household would occur once or twice a month.

1. GAMEBOARD FOR CROP ENTERPRISE ACCOUNTING

This is the primary instrument of the system. It consists of a piece of thick cardboard--approximately 12 inches square--which is divided into a grid of up to seven columns and up to six rows. Each column corresponds to a single crop enterprise (maximum six crops or crop associations) with the exception of column 7, which may be used to monitor on-farm activities not specifically attributable to a crop, for example fence repairs, collecting firewood, constructing farm structures, weeding and repairing irrigation canals, etc. In contrast, the six rows of the board correspond to the five stages of the crop cycle--land preparation, planting, cultivation tasks, harvest, and marketing--plus one row for recording off-farm employment activities. Since there are seven spaces in this last row, the household could record its off-farm employment by individual days of the week, or it can assign separate spaces to different members of the family. An illustration of the Crop Board is presented in Annex A.

For each space of the gameboard in use a nail or hook is inserted. From it may be hung a variety of color-coded counting chips representing different units of production costs, units of product harvested, and units sold. The chips representing production costs are square-shaped; they include chips for (1) family labor, (2) hired labor, (3) animal labor, (4) machinery use, (5) seed, (6) fertilizer, (7) insecticides, and (8) irrigation water. The chips for units of harvest are round and yellow in color. So long as consistency is maintained, each chip may represent whatever unit of measurement the participating household may be most familiar with--for example, sack, double-sack load, hundredweight, box, ton, etc. Similar round chips, this time colored orange, are utilized to count units of crop products sold.

For any given crop the household begins with the land preparation stage and starts to assemble chips in accordance with the day-by-day use of its own and purchased inputs. (EXAMPLE: the family utilized on its corn crop 2 days of oxen for plowing, 4 days of family labor, 2 days of hired labor, and 4 hours of irrigation water during Land Preparation. Thus, a total of 12 chips of four different colors representing different inputs would be hung on the nail corresponding to the column for corn and the row for land preparation). When the first stage is completed, the collection of chips for the second stage--Planting--begins, and so on. At periodic intervals (every 2-4 weeks) the household is visited by a paratechnician supervisor. He empties the chips from the nail corresponding to any crop stage which has been completed. He sorts and counts the chips. Then he converts the chip-counts into numerical values of quantity, unit price, and total value. These are recorded on a summary sheet--one stage at a time--the format for which is presented in Annex A-2. At the end of the harvest period the paratechnician summarizes the data from all stages, calculating total income, total costs, and net income.

Participating farmers would be organized in small groups of 10-15 members, each group supervised by a paratechnician (a member of the local community) selected by the participants. During the crop cycle the paratechnician will prepare a farm map for each participant, or at least measure the area planted for each crop monitored (see Annex A-3). At the end of the harvest period, the paratechnician will standardize the performance data for each crop by unit of land (per hectare or manzana). He will then complete a comparative analysis of yields, costs, and net income by crop. Each member of the group will receive a summary which compares his performance against that of the most successful farmer or the average for the group (see Annex A-4). Such summaries will subsequently be discussed in a group meeting. In this meeting the difference in performances will be presented graphically with a chart similar to that shown in Annex A-5. The purpose of this discussion is to identify and explain the causes of differences in the production of different farmer-members, and to discuss ways of improving yields, lowering costs, obtaining better prices, and so on. In sum, the objective is to utilize the data collected by each farmer to identify opportunities for improving farm production performance on an individual or group basis.

2. GAMEBOARD FOR LIVESTOCK ENTERPRISE ACCOUNTING (See ANNEX B)

This instrument consists of a grid of columns and rows similar to the Crop Enterprise Gameboard. The column headings (up to seven) correspond to specific animal enterprises which the rural household wishes to monitor. These may range from major livestock such as cattle, sheep, goats, and swine to minor livestock such as chickens, ducks, guinea pigs, and rabbits. The six row headings correspond to three livestock <u>income</u> accounts--births and purchases, sales of animal products, and family consumption of animal products--plus three livestock <u>cost</u> accounts--feed, medicinal treatments, and deaths. The square counting chips correspond to family labor use, feed, and medicines. The remainder of the counting chips are round and color-coded: green chips for purchased animals, white for births, orange for units sold, blue for units consumed by the household, and black for animal deaths.

To open the board, an inventory of existing animal stocks--by livestock enterprise--is necessary. This is recorded on a summary sheet under the section entitled "Initial Stock" (See Annex B-2). The rural household then begins to collect chips on a day-to-day basis. At the end of three months (or other time period agreed upon by the household and the paratechnician) the local supervisor visits the family. He or she removes, sorts by color and counts the chips, which are then converted into numerical values on the summary sheet.

Because women are frequently responsible for the care of animal stocks within rural households, it is probable that the livestock gameboards will be kept by females in most cases. This will provide an opportunity to work with groups of women in teaching farm accounting skills; it therefore represents a possibly useful instrument for application in "Women in Development" programs.

3. SINGLE-SHEET FARM ACCOUNTING RECORDS (See ANNEX C)

An alternative instrument to crop and livestock gameboards is also available. It consists of a two-sided sheet of very light cardboard. Green sheets are used to monitor crop enterprises, yellow sheets to monitor livestock enterprises. On each sheet, the first side contains the graphic symbolism component, to be managed by the rural household, the second side contains the numerical summary. The formats are similar, if not identical, to the summary sheets used in connection with the gameboards. The major differences are (1) no counting chips are used, (2) only one crop or livestock enterprise is monitored per instrument, and (3) no color-coding is employed.

The basic advantage of the single-sheet instrument is that it is cheaper and simpler to operate than a gameboard. Once again, the format is a grid wherein row headings represent stages in the crop cycle or animal production year, while the column headings depict cost and income categories. The graphic symbolism is the same as that used on the gameboards and counting chips. However, instead of gathering chips on a nail, the farmer is merely required to make a scratch-mark for each unit of labor or input used and each unit of production harvested or sold. The scratch-marks can be recorded in whatever way is most comfortable for the farmer. For example, five units could be marked like this (⧅) or this (𝍸) or even this (𝍸). Once again, like the counting chips, each scratch-mark represents a unit of measurement, be it a day of family or hired labor, a day of oxen, a kilo of seed, a bag of fertilizer, an hour of irrigation water, a sack of harvested product, etc. At periodic intervals, the supervisor will visit the household, count the scratch-marks for completed production stages, and convert them into numerical values of quantity, unit price, and total value. These numerical values will be recorded on the flip-side of the sheet, which has a format identical to the summary sheets described in Annex A and B.

Application of the single-sheet farm accounting instruments especially lend themselves for use by rural school children. As a class activity, all students in a given grade can be given one or more forms to apply to their own family farming operations. The student takes the form home, begins to fill it out day after day, and may even teach the use of the form to other members of the family. Once a month the student brings his forms to school

so that his/her teacher can review the accuracy and consistency with which data are being collected on the graphic side and being converted into numerical summaries. At the end of the crop cycle or production period the teacher can conduct a comparative summary of performance outcomes (similar to that prepared for gameboard users) for each child to return to his parents as a permanent record of crop or livestock activities for that given year. Of course, the teacher would be given a modest gratuity for his/her supervisory and summation efforts.

The advantages and opportunities of the school-based approach to gathering farm enterprise data about rural households are several. First, it provides a practical application of the arithmetic skills being taught in primary school. Second, it introduces rural children to the concepts and possible application of farm management record-keeping at an early and impressionable age. Third, because education activities receive such high priority among rural households, using school children for introducing farm accounting skills to their families is possibly the most culturally acceptable avenue for the introduction of such initiatives. Fourth, the approach enables outside analysts to gather excellent time series data of production performance for large numbers of farmers at very low cost. And Fifth, rural school children represent both participating and non-participants in development project activities; thus, they offer an easy way of identifying and monitoring both project impact on participants as well as the comparative performance of local control groups, all at minimal cost and without risking intrusive research techniques.

The Paratechnicians

To field test the farmer-controlled information system descibed above in a single country, it is proposed that three separate regions be selected. In each region, three communities and one rural school would be selected for participation. For each community, some 10-15 farmers would be chosen for record-keeping. This group would likewise select a local leader or representative--perhaps a farmer like themselves, perhaps the son of a farmer--to supervise their record-keeping activities. This local paratechnician would work strictly on a part-time basis, making individual farm visits to each of the members of the group up to twice a month. The sponsoring agency would pay the supervisor a modest gratuity for his services, which would be based on the number of visits he makes and the number of summaries he completes. It is assumed that the farmers visited by the paratechnician will be his "neighbors" in the sense that all will be located no more than an hour's walk from his own residence. Tentatively, a part-time services payment of $20 per month is contemplated. Given three communities per region, there would be nine farmer-paratechnicians per country, which suggests a total budget for this component of US$ 2,160.

Host-Country Supervisor

To supervise and support the paratechnicians, to assist in their continuing training of farmers, and to monitor the information-gathering activities of rural school children and their teachers, a full-time host-country technician is needed. He would cover all three regions, spending a minimum of five days per month in each. This individual would have considerably more schooling than the paratechnicians; he could be a vocational high school graduate, perhaps even a sub-professional with some college training, or perhaps even a college student who has finished his studies but has not yet completed his thesis to receive a degree. Whoever he may be, the important thing is that this person should come from a peasant or small farm background, i.e., the son of a campesino, a youth ambitious to achieve his socio-economic aspirations but who nonetheless maintains a strong commitment and sense of identification with his social and ethnic origins. The cost of such a project supervisor is tentatively estimated at $6,200 per year. This figure includes a base salary of $250 per month (x 14 months to include benefits equivalent to two-months salary) plus 15 days of per diem each month at $15/day.

Selection of Communities and Farmers

In each country three regions should be selected for field-testing of farmer-controlled information systems. These should represent distinctly different ecological and climatic zones, each with a different mix of crop and livestock patterns. Tentatively, the regions selected might represent the highlands, temperate valleys, and tropical lowlands.

It is also important that the communities selected in each region contain rural households who are presently considered participants in, or beneficiaries of, rural development projects sponsored by the host-country and/or outside donor agencies. This circumstance opens the possibility of using data generated by the proposed information systems to measure the economic and welfare impact of these projects over time.

Farmers selected for participation in the record-keeping project should be fairly similar in characteristics within a given community. Care must be exercised to chose rural households with similar farm size, soil quality, asset levels, crop and livestock patterns, and socio-cultural background--i.e., the "average" farmers for that community.

It is suggested that one group of participants per region consist exclusively of female household heads. Groups of women participants would likewise be expected to select a female paratechnician to supervise their data collection efforts. This emphasis on women is appropriate because in many rural societies women play key roles in monitoring the cash flow of the rural household. As such they are active decision-makers and potentially may show greater interest in farm record-keeping activities than male heads of household.

Finally, it is suggested that the intensity with which the proposed data collection instruments are introduced be varied from one community to another. In some groups, only crop enterprise gameboards should be introduced; in others, only livestock gameboards; in still others a crop-livestock system should be introduced, perhaps combined with other farm and non-farm activity accounting. These specialized approaches should teach the sponsoring agency a great deal about how quickly rural households can handle increasingly sophisticated data collection instruments, and at what level of supervision.

Activities of the Consultant

The proposed farmer-controlled information system described here was developed by Rural Development Services (RDS), a private consulting firm which specializes in the design, management, and evaluation of development projects to assist the rural poor. The firm is staffed on a part-time basis by a network of predominantly Latin American professionals, technicians, and farmer-paratechnicians, all distinguished by their ability to communicate effectively with rural households and communities. A unique quality of RDS consultancies is their self-limiting nature--i.e., RDS seeks to promote projects which can become locally-controlled, self-sustaining, and self-replicating. The firm's preferred role is that of a temporary development catalyst, responsible for transferring knowledge and skills to local people so that they become increasingly dependent on their own expertise rather than that of outsiders.

To get a country-specific system designed, implemented, and placed on a self-replicating basis after one year will require an estimated 51 days of consultant services by RDS, of which 36 days would be spent in-country and 15 days in the U.S. for materials preparation and report write-up. At least three, and preferably four, visits to the country are recommended, as follows:

Outline of Consultant Activities for a Single Country

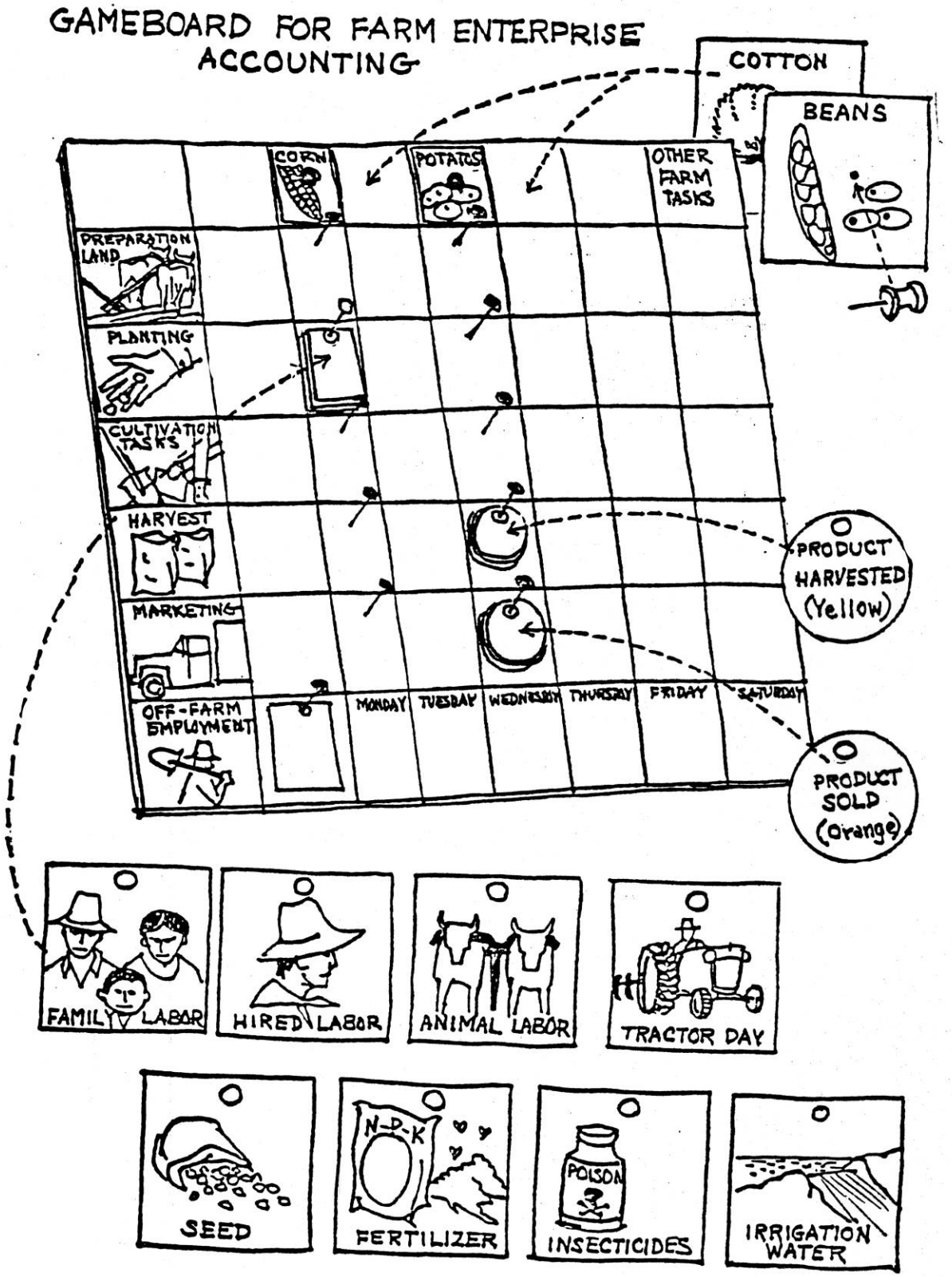
A C T I V I T I E S	DURATION
INITIAL VISIT -Extensive field travel to adapt system design to local settings and to select possible communities -Initiate search for host-country supervisor	6 days
FIRST IMPLEMENTATION VISIT -Select and train host-country supervisor -Visit regions to make final community, school, and farmer selections -Distribute materials -Train local paratechnicians	12 days
SECOND IMPLEMENTATION VISIT -Review performance of host-country supervisor, retraining where necessary -Visit all paratechnicians and a sample of participating farmers, up-grading deficiencies -Visit participating school teachers and review status of records -Correct design deficiencies in instruments	6 days
THIRD IMPLEMENTATION VISIT -Review data generated -Assist host-country supervisor and paratechnicians in data summation techniques -Provide guidlines for system replication and continuity	12 days
IN THE U.S. -Preparation of materials -Mid-contract report write-up -Final report write-up	15 days
TOTAL	51 days

Illustrative Budget for System Implementation in One Country

The estimated cost of establishing the system in one country is US$29,000. This would involve about $18,900 in Research and Development Costs and $10,100 in Recurrent Local Currency Costs. Such figures are based on the assumption that system implementation would reach a total of 225 rural households, some 135 of which would utilize gameboards under paratechnical supervision while another 90 households would be documented by school children under the supervision of their teachers. Excluding the cost of the national-level host-country supervisor, the recurrent local costs of the system are US$3,885 per year or $17 per household.

RESEARCH AND DEVELOPMENT COSTS (CONSULTANTS)		
Salaries		
51 days x $180/day		9,180
Per Diem		
42 days x $50/day		2,100
International Transportation		2,000
Local Transportation		350
Materials		
150 gameboards x $10/each		1,500
		15,130
Contingencies (5%)		755
Overhead (33% of salaries)		3,030
	Sub-Total	$18,915
RECURRENT LOCAL CURRENCY COSTS		
Host-Country Supervisor (National-Level)		
Salary: $250/mo. x 14		3,500
Per Diem: $15/day x 15 days/mo. x 12 mos.		2,700
Farmer Paratechnicians (9)		
$20/mo. x 12 mos. x 9		2,160
School Teachers (3)		
$25/mo. x 8 mos. x 3		600
Materials		
$5 x $225 households		1,125
	Sub-Total	$10,085
TOTAL COSTS PER COUNTRY		$29,000

ANNEX A-1


GAMEBOARD FOR FARM ENTERPRISE ACCOUNTING
COTTON
BEANS
CORN
POTATOS
OTHER FARM TASKS
PREPARATION LAND
PLANTING
CULTIVATION TASKS
HARVEST
MARKETING
OFF-FARM EMPLOYMENT
MONDAY
TUESDAY
WEDNESDAY
THURSDAY
FRIDAY
SATURDAY
PRODUCT HARVESTED (Yellow)
PRODUCT SOLD (Orange)
FAMIL LABOR
HIRED LABOR
ANIMAL LABOR
TRACTOR DAY
SEED
N-P-K
FERTILIZER
POISON
INSECTICIDES
IRRIGATION WATER

ANNEX A-2

SUMMARY SHEET FOR CROP ENTERPRISE

NOMBRE DEL AGRICULTOR _____ AÑO AGRICOLA _____

RENDIMIENTO DEL RUBRO

CULTIVO Y VARIEDAD _____

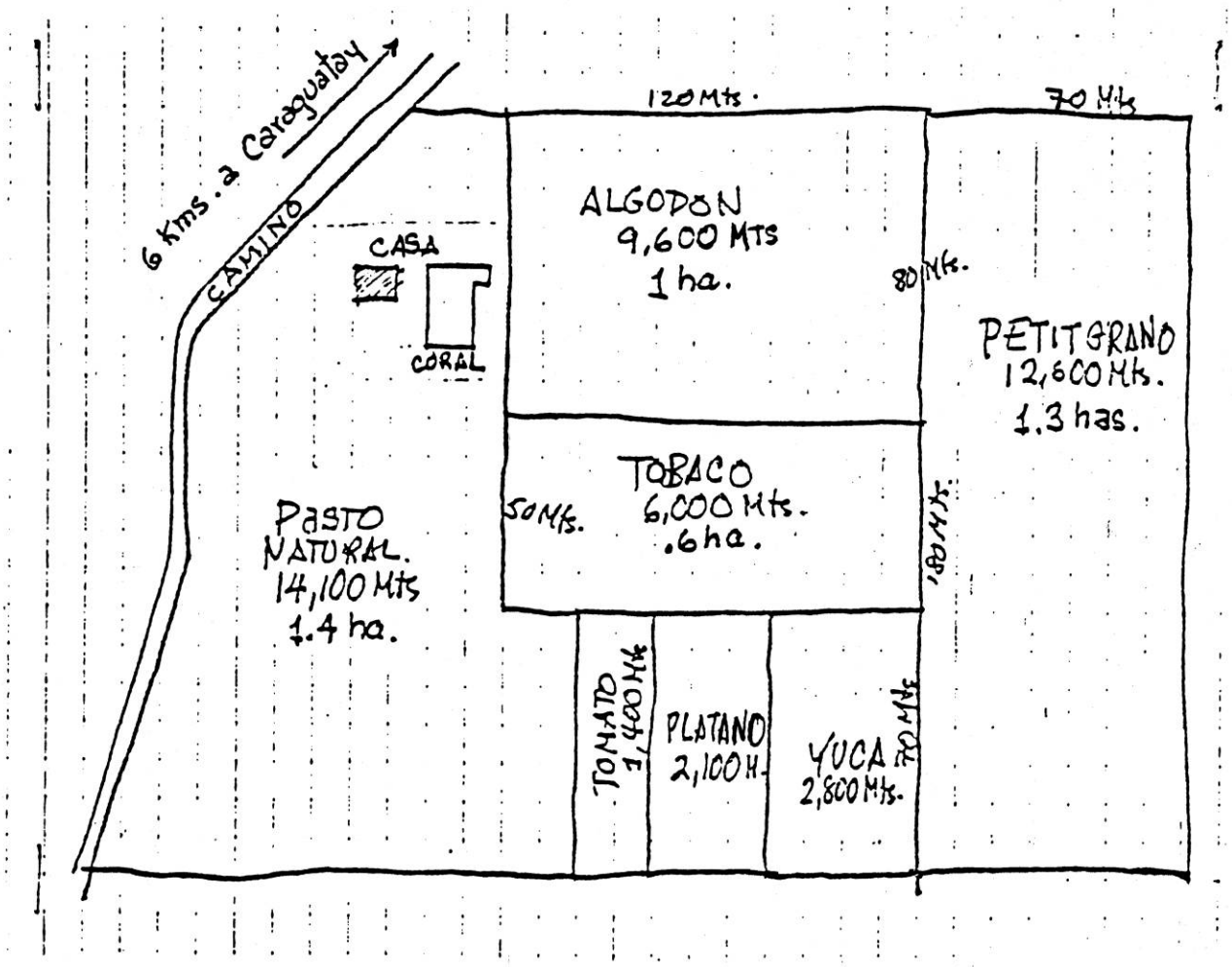
EXTENSION SIEMBRADO _____ HAS.

	DETALLE DE GASTOS	CANTIDAD	PRECIO	VALOR TOTAL
PREPARACION DEL TERRENO	Mano de Obra Familiar			
	Mano de Obra Contratada			
	Maquinaria			
	Animales			
	Otros			
	TOTAL			
SIEMBRA	Mano de Obra Familiar			
	Mano de Obra Contratada			
	Maquinaria			
	Animales			
	Semilla			
	Fertilizante			
	Otros			
	TOTAL			
LABORES CULTURALES	Mano de Obra Familiar			
	Mano de Obra Contratada			
	Maquinaria			
	Animales			
	Fertilizante			
	Insecticida			
	Otros			
	TOTAL			
COSECHA	Mano de Obra Familiar			
	Mano de Obra Contratada			
	Maquinaria			
	Animales			
	Otros			
	TOTAL			
OTROS GASTOS	Alquiler del Terreno			
	Pago de Intereses			
	TOTAL			
	TOTAL GASTOS DIRECTOS DEL RUBRO			

PRODUCCION COSECHADA			
SUB-PRODUCTOS			
TOTAL VALOR DE LA PRODUCCION DEL RUBRO			
Menos GASTOS DIRECTOS			
GANANCIA (Margen Bruto)			

ANNEX A-3

FARM MAP



ANNEX A-4

COMPARATIVE CROP PERFORMANCE SUMMARY FOR AN INDIVIDUAL FARMER

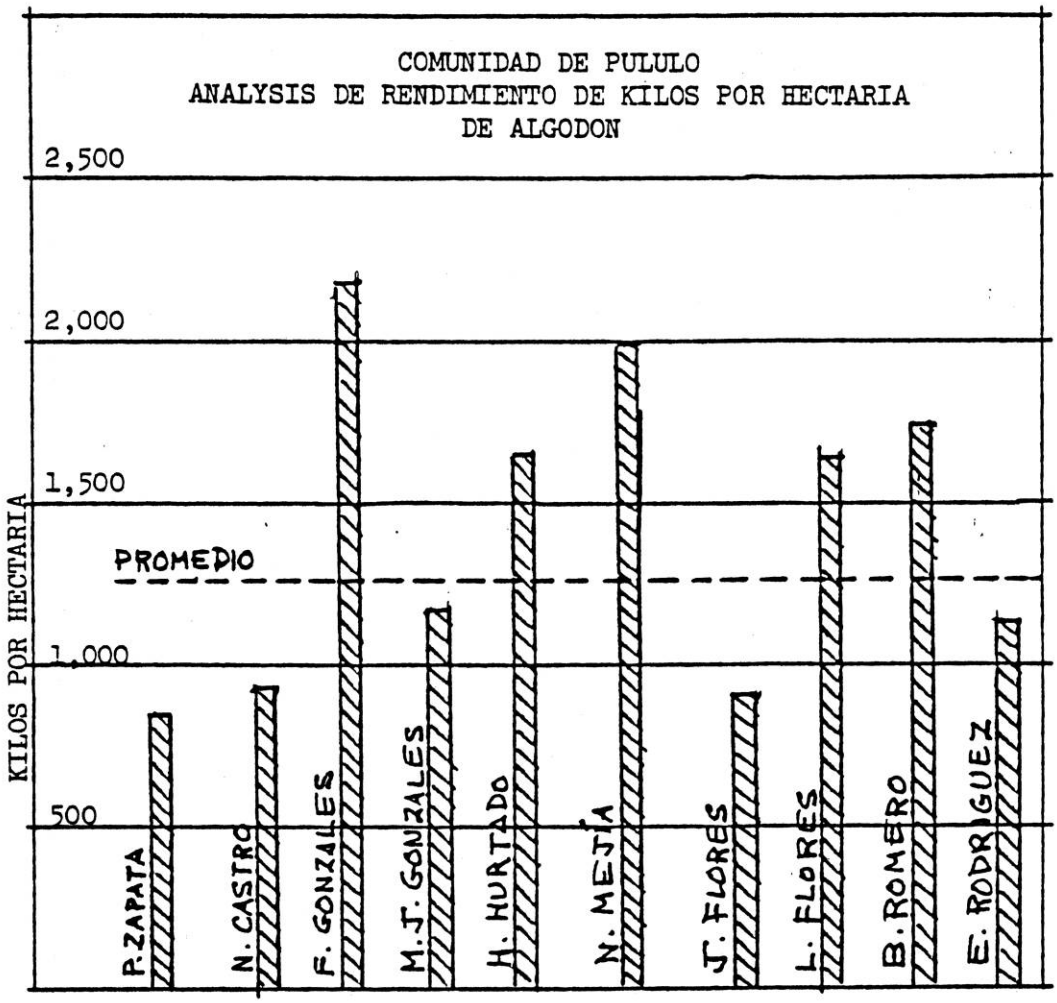
RESUMEN COMPARATIVO

Nombre: Nepomuceno Mejía

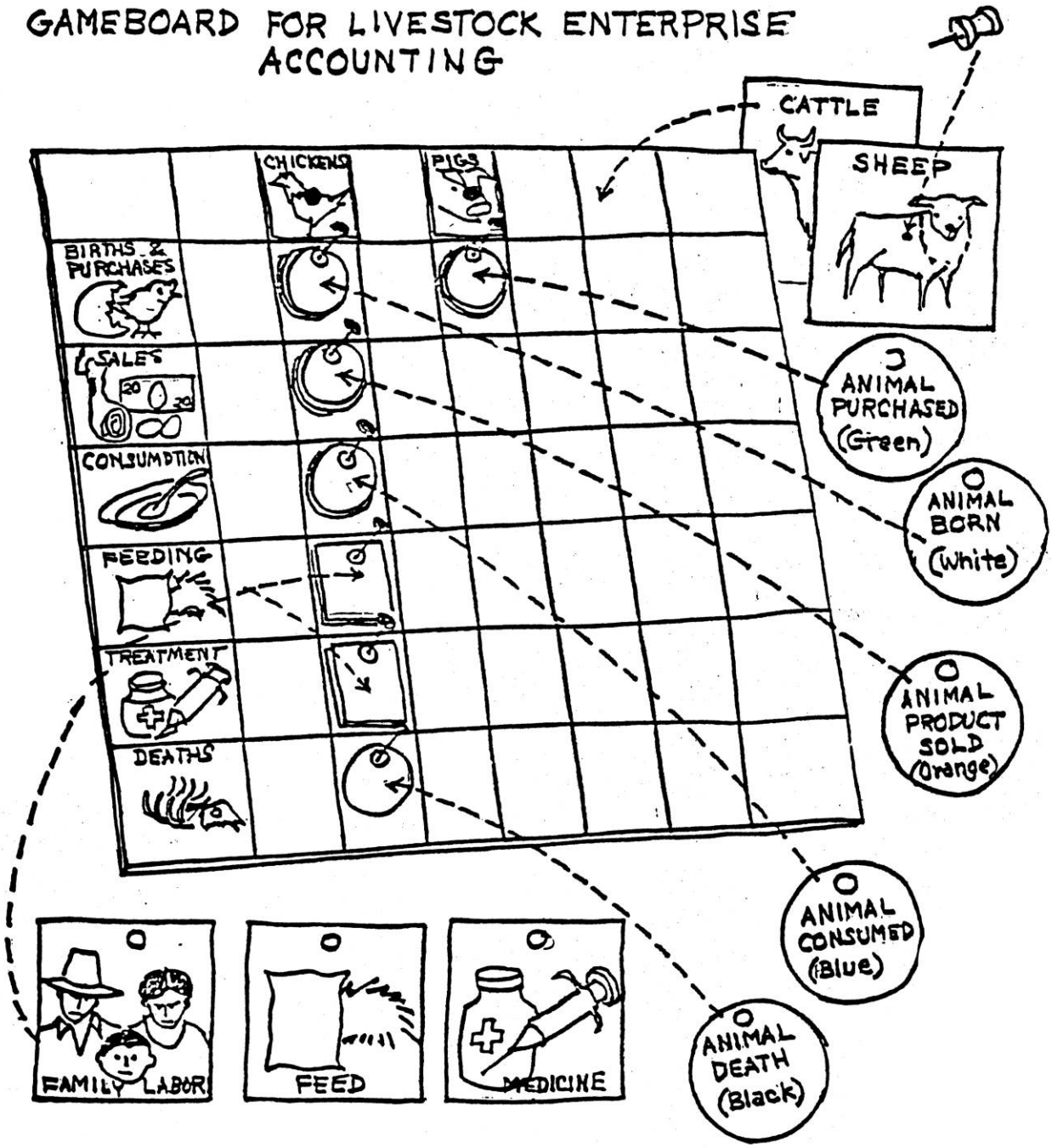
D E T A L L E	SU CHACRA	PROMEDIO DEL GRUPO
1ª Rubro: Algodon		
1. Rendimiento, kilos por hectaria	2000 kg	1,378 Kg
2. Total gastos por hectaria	36,900	23,680
Preparación de Terreno	1,750	2.500
Siembra	1,700	2.300
Labores Culturales	12,950	7,856
Cosecha y Otros	20,500	11,024
3. Ganancia por hectaria	53,100	38.330
2ª Rubro: Tobaco		
1. Rendimiento, kilos por hectaria	1,200 kg	1,853 Kg
2. Total gastos por hectaria	39,500	41,374
Preparación de Terreno		
Siembra		

ANNEX A-5

COMPARATIVE CROP PERFORMANCE ANALYSIS FOR A FARMER GROUP



ANNEX B-1


GAMEBOARD FOR LIVESTOCK ENTERPRISE ACCOUNTING
CATTLE
SHEEP
CHICKENS
PIGS
BIRTHS & PURCHASES
SALES
CONSUMPTION
FEEDING
TREATMENT
DEATHS
3 ANIMAL PURCHASED (Green)
ANIMAL BORN (White)
ANIMAL PRODUCT SOLD (Orange)
ANIMAL CONSUMED (Blue)
ANIMAL DEATH (Black)
FAMILY LABOR
FEED
MEDICINE

ANNEX B-2

SUMMARY SHEET FOR LIVESTOCK ENTERPRISE

NOMBRE DEL GANADERO _____ AÑO GANADERO _____

RENDIMIENTO DEL RUBRO GANADERO

NOMBRE Y RAZA DE LOS ANIMALES

	DETALLE	CABEZAS	VALOR UNITARIO	VALOR TOTAL
EXISTENCIA INICIAL				
	TOTAL			
INGRESOS	Nacidos			
	Comprados			
	Ventas			
	Consumo			
	TOTAL			
GASTOS	Comprados			
	Insumos			
	Mano de Obra			
	Muertos			
	TOTAL			
GANANCIA DEL TRIMESTRE				
EXISTENCIA INICIAL				
	TOTAL			
INGRESOS	Nacidos			
	Comprados			
	Ventas			
	Consumo			
	TOTAL			
GASTOS	Comprados			
	Insumos			
	Mano de Obra			
	Muertos			
	TOTAL			
GANANCIA DEL TRIMESTRE				
TOTAL INGRESOS A MEDIO AÑO				
TOTAL GASTOS A MEDIO AÑO				
GANANCIA A MEDIO AÑO				

	DETALLE	CABEZAS	VALOR UNITARIO	VALOR TOTAL
EXISTENCIA INICIAL				
	TOTAL			
INGRESOS	Nacidos			
	Comprados			
	Ventas			
	Consumo			
	TOTAL			
GASTOS	Comprados			
	Insumos			
	Mano de Obra			
	Muertos			
	TOTAL			
GANANCIA DEL TRIMESTRE				
EXISTENCIA INICIAL				
	TOTAL			
INGRESOS	Nacidos			
	Comprados			
	Ventas			
	Consumo			
	TOTAL			
GASTOS	Comprados			
	Insumos			
	Mano de Obra			
	Muertos			
	TOTAL			
GANANCIA DEL TRIMESTRE				
TOTAL INGRESOS EN EL AÑO				
TOTAL GASTOS EN EL AÑO				
GANANCIA EN EL AÑO				

ANNEX C

SINGLE-SHEET FARM ACCOUNTING RECORDS

1. CROP ENTERPRISE (GREEN SHEET)

2. LIVESTOCK ENTERPRISE (YELLOW SHEET)

ANNEX C-1

CROP ENTERPRISE (Green sheet)

	MANO DE OBRA FAMILIAR	MANO DE OBRA CONTRATADA	ANIMALES	MAQUINARIA	AGUA DE RIEGO	SEMILLA	FERTILIZANTE Y ABONO	INSECTICIDAS
PREPARACION DEL TERRENO								
SIEMBRA								
LABORES CULTURALES								
COSECHA					PRODUCCION COSECHADA			

ANNEX C-1 (Cont.)

CROP ENTERPRISE (Green sheet)

NOMBRE DEL AGRICULTOR _____ AÑO AGRICOLA _____

RENDIMIENTO DEL RUBRO

CULTIVO Y VARIEDAD _____

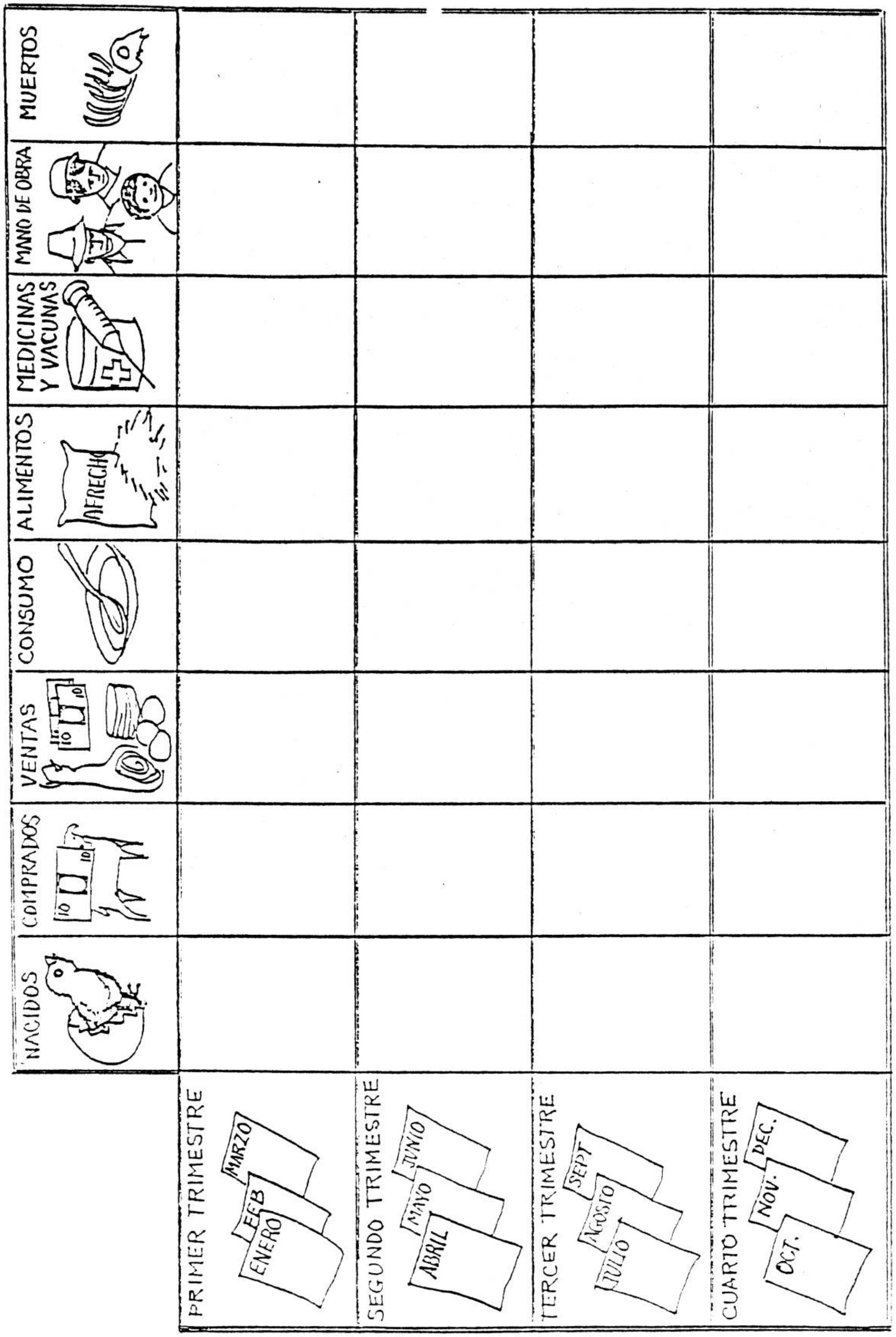
EXTENSION SIEMBRADO _____ HAS.

	DETALLE DE GASTOS	CANTIDAD	PRECIO	VALOR TOTAL
PREPARACION DEL TERRENO	Mano de Obra Familiar			
	Mano de Obra Contratada			
	Maquinaria			
	Animales			
	Otros			
	TOTAL			
SIEMBRA	Mano de Obra Familiar			
	Mano de Obra Contratada			
	Maquinaria			
	Animales			
	Semilla			
	Fertilizante			
	Otros			
	TOTAL			
LABORES CULTURALES	Mano de Obra Familiar			
	Mano de Obra Contratada			
	Maquinaria			
	Animales			
	Fertilizante			
	Insecticida			
	Otros			
	TOTAL			
COSECHA	Mano de Obra Familiar			
	Mano de Obra Contratada			
	Maquinaria			
	Animales			
	Otros			
	TOTAL			
OTROS GASTOS	Alquiler del Terreno			
	Pago de Intereses			
	TOTAL			
TOTAL GASTOS DIRECTOS DEL RUBRO				

PRODUCCION COSECHADA			
SUB-PRODUCTOS			
TOTAL VALOR DE LA PRODUCCION DEL RUBRO			
Menos GASTOS DIRECTOS			
GANANCIA (Margen Bruto)			

ANNEX C-2

LIVESTOCK ENTERPRISE (Yellow sheet)



ANNEX C-2 (Cont.)

LIVESTOCK ENTERPRISE (Yellow sheet)

NOMBRE DEL GANADERO _____ AÑO GANADERO _____

RENDIMIENTO DEL RUBRO GANADERO

NOMBRE Y RAZA DE LOS ANIMALES _____

DETALLE		CABEZAS	VALOR UNITARIO	VALOR TOTAL
EXISTENCIA INICIAL				
	TOTAL			
INGRESOS	Nacidos			
	Comprados			
	Ventas			
	Consumo			
	TOTAL			
GASTOS	Comprados			
	Insumos			
	Mano de Obra			
	Muertos			
	TOTAL			
GANANCIA DEL TRIMESTRE				
EXISTENCIA INICIAL				
	TOTAL			
INGRESOS	Nacidos			
	Comprados			
	Ventas			
	Consumo			
	TOTAL			
GASTOS	Comprados			
	Insumos			
	Mano de Obra			
	Muertos			
	TOTAL			
GANANCIA DEL TRIMESTRE				
TOTAL INGRESOS A MEDIO AÑO				
TOTAL GASTOS A MEDIO AÑO				
GANANCIA A MEDIO AÑO				

DETALLE		CABEZAS	VALOR UNITARIO	VALOR TOTAL
EXISTENCIA INICIAL				
	TOTAL			
INGRESOS	Nacidos			
	Comprados			
	Ventas			
	Consumo			
	TOTAL			
GASTOS	Comprados			
	Insumos			
	Mano de Obra			
	Muertos			
	TOTAL			
GANANCIA DEL TRIMESTRE				
EXISTENCIA INICIAL				
	TOTAL			
INGRESOS	Nacidos			
	Comprados			
	Ventas			
	Consumo			
	TOTAL			
GASTOS	Comprados			
	Insumos			
	Mano de Obra			
	Muertos			
	TOTAL			
GANANCIA DEL TRIMESTRE				
TOTAL INGRESOS EN EL AÑO				
TOTAL GASTOS EN EL AÑO				
GANANCIA EN EL AÑO				

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