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 The community grain depot concept

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9. ABSTRACT

After a brief, simply written text on why a community grain depot is important, what it provides, and how it works, this report presents diagrams and plans for the necessary physical components accompanied by, again, simply worded explanations. Following this are cartoons and pictures of the various aspects of the grain depot with a few words highlighting the drawings. Basically, a Community Grain Depot can be built and managed by business groups and/or individuals. It is a system that encourages production, sells production supplies, supplies technical information, offers harvesting services, buys farm produce, and collects marketable quantities of grain for prospective buyers.

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# THE COMMUNITY GRAIN DÉPOT CONCEPT



The "Community Grain Depot" is a multi-crop, multi-purpose modification of the suggested "Rural Grain Warehouse" concept presented in the "Wildman Report". The added features include facilities for production supplies and harvesting equipment.

THE COMMUNITY GRAIN DEPOT CONCEPT

THE DEPOT IS NEAR THE FARMER AT THE HAMLET LEVEL -

FARM PRODUCTION SURROUNDS THE DEPOT -

Grains

Rice

Sorghum

Corn

Other Crops

Soybeans

Mung beans

Peanuts

etc.

Forecasts show - - - - -

INCREASING NUMBERS OF PIGS AND CHICKENS .....

MEANS MORE DEMAND FOR FEED GRAINS

The grains to meet the feed needs - -

FOR 1971 CAME FROM -

IMPORTS - 200,000 MT

PADDY EQUIVALENT - 928,000 MT AND

PLANNED FEED GRAIN PRODUCTION - 71,000 MT.

But! As shown here these amounts only filled

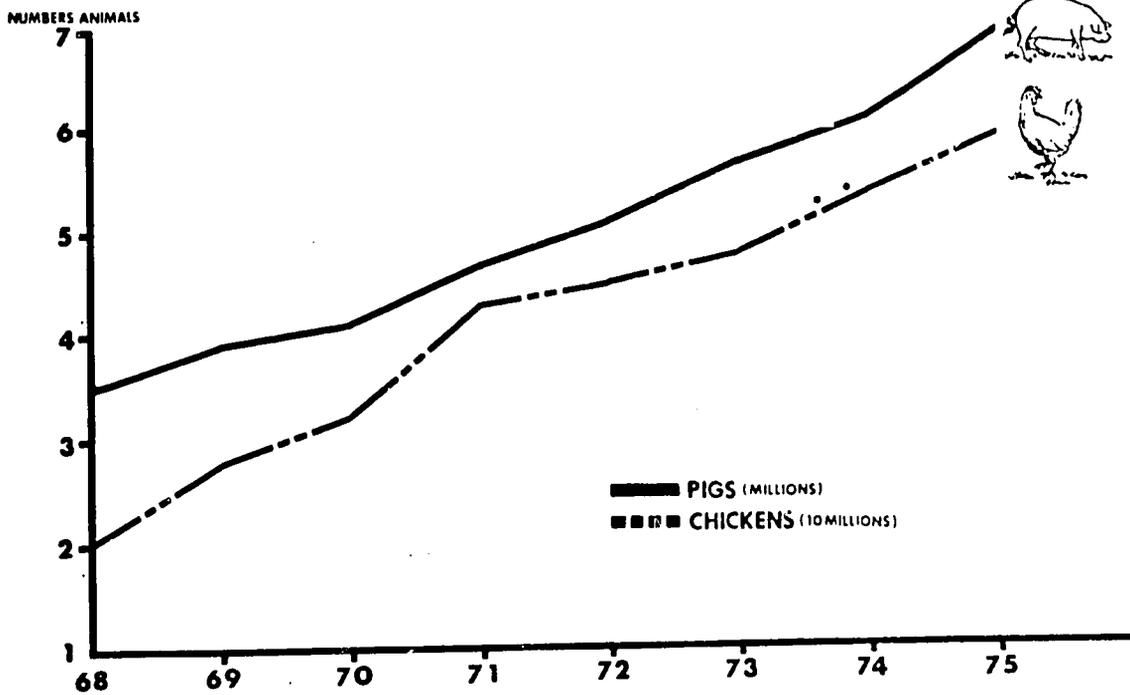
1/3 of the need. There is room for increasing

domestic production of Feed Grains to make Improved

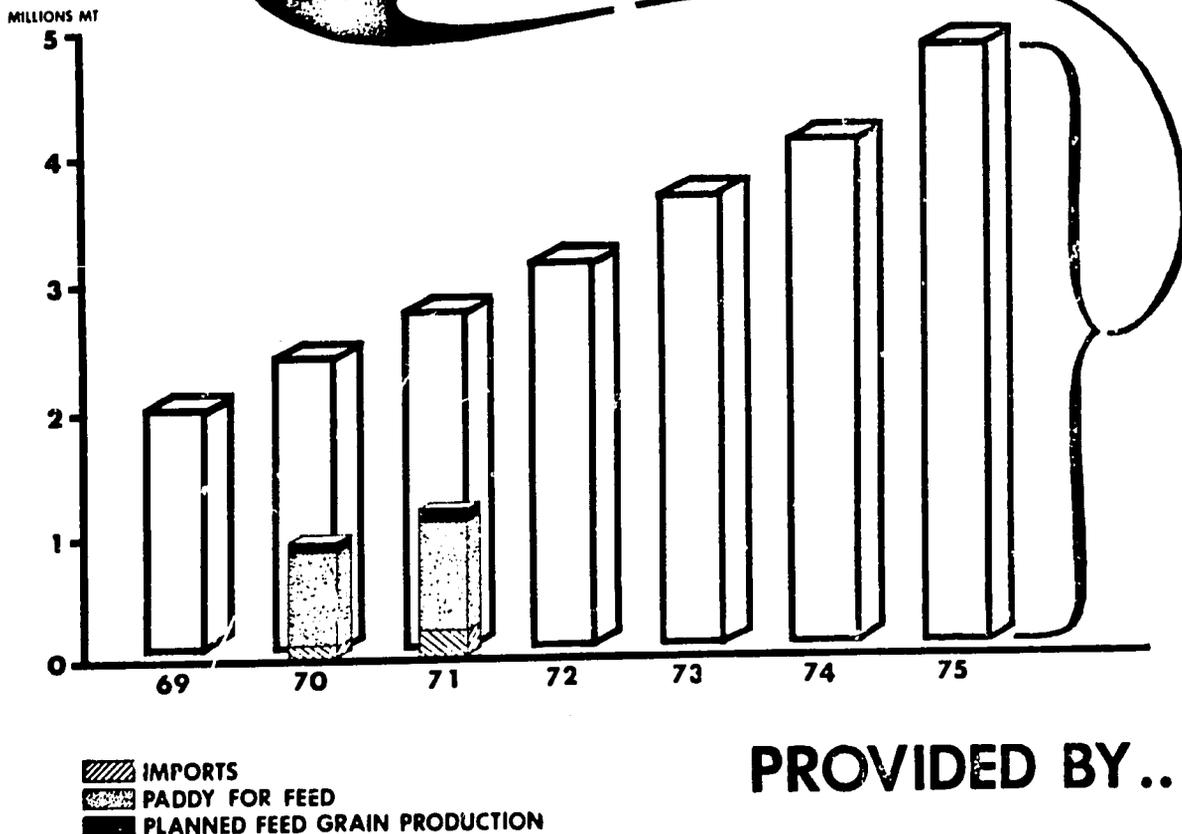
Feeds. The Improved Feeds are -

PROVIDED BY .....

# INCREASED NUMBERS OF SWINE & CHICKENS...



...MEANS MORE DEMAND FOR IMPROVED FEEDS



PROVIDED BY...

THE FEED MILL !!!!

The Feed Mill mixes the sorghum or corn with

feed supplements and additives to make -

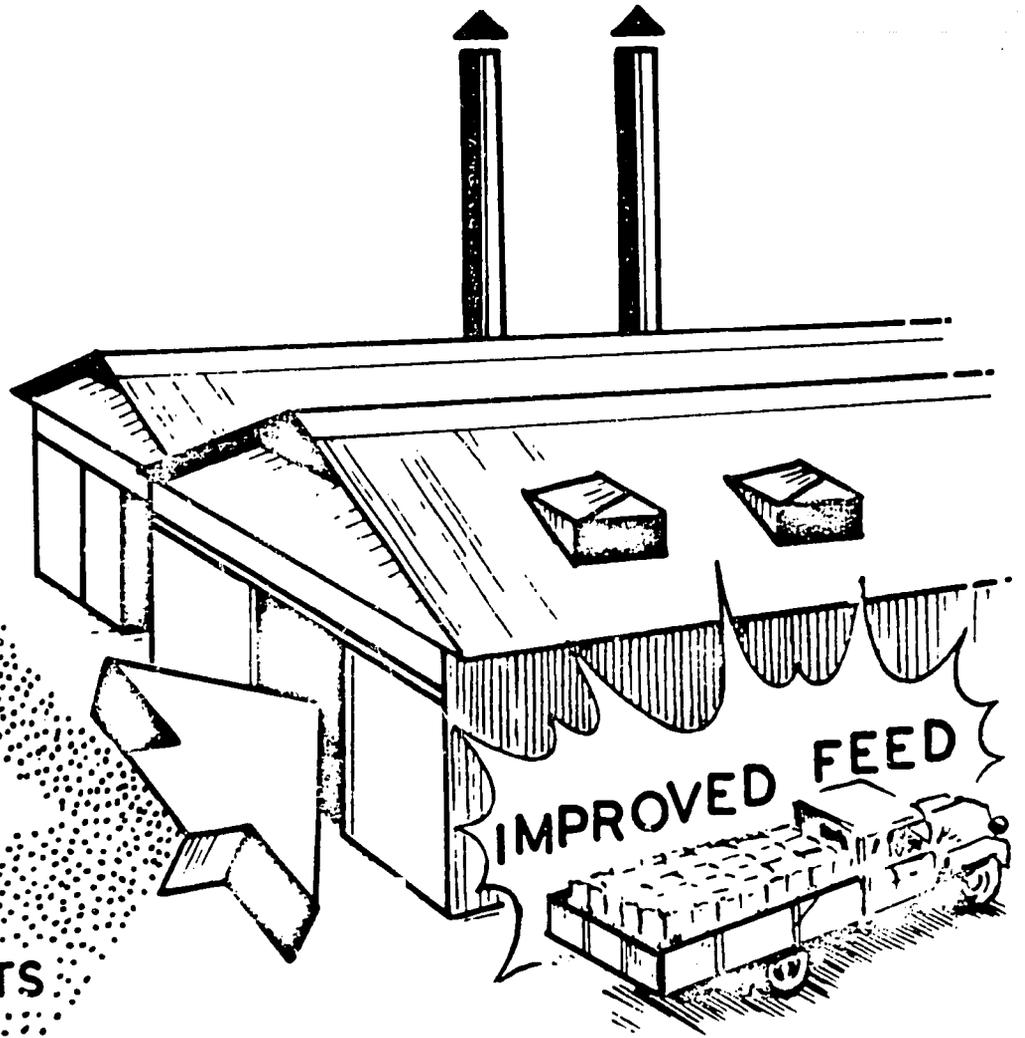
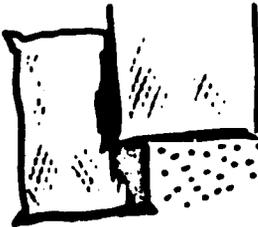
IMPROVED FEED

# THE FEED MILL !!!

GRAIN



FEED  
SUPPLEMENTS



IMPROVED FEED

THE FEED MILLS - -

are the primary market for Feed grains.

29 operating with a production capacity of  
554 MT/day and 12 more planned for operation  
in 1971.

To fill the needs of these Mills would require  
300,000 MT of grain or the production from  
100,000 hectares.

THE PROBLEM IS HOW TO GET THE GRAIN PRODUCED?



VIETNAM HAS THE BASIC RESOURCES TO PRODUCE GOOD FEED GRAINS.

It has favorable climatic conditions -

SUN

WATER

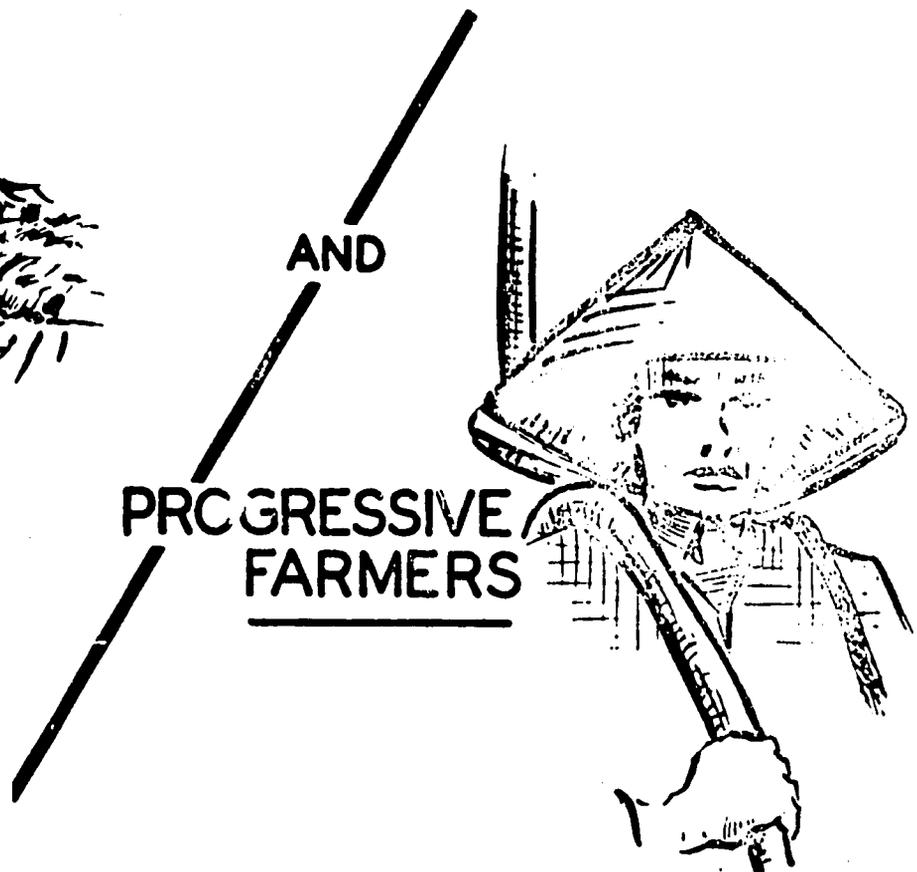
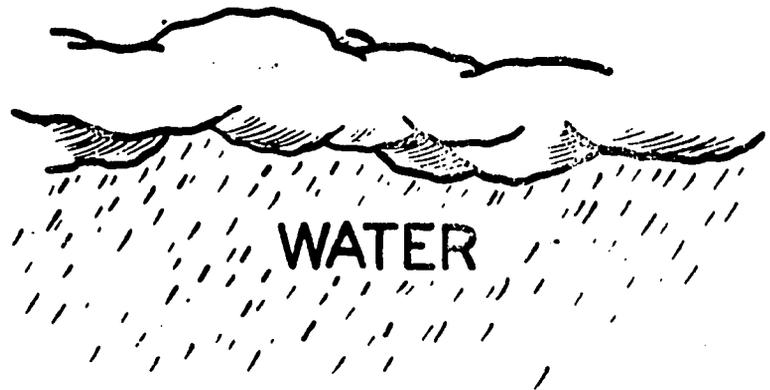
natural resources -

SOIL

and human resources -

PROGRESSIVE FARMERS.

# VIETNAM HAS THE BASIC RESOURCES TO PRODUCE GOOD FEED GRAINS...



BUT -

THE FARMER NEEDS ENCOURAGEMENT.

This encouragement can be

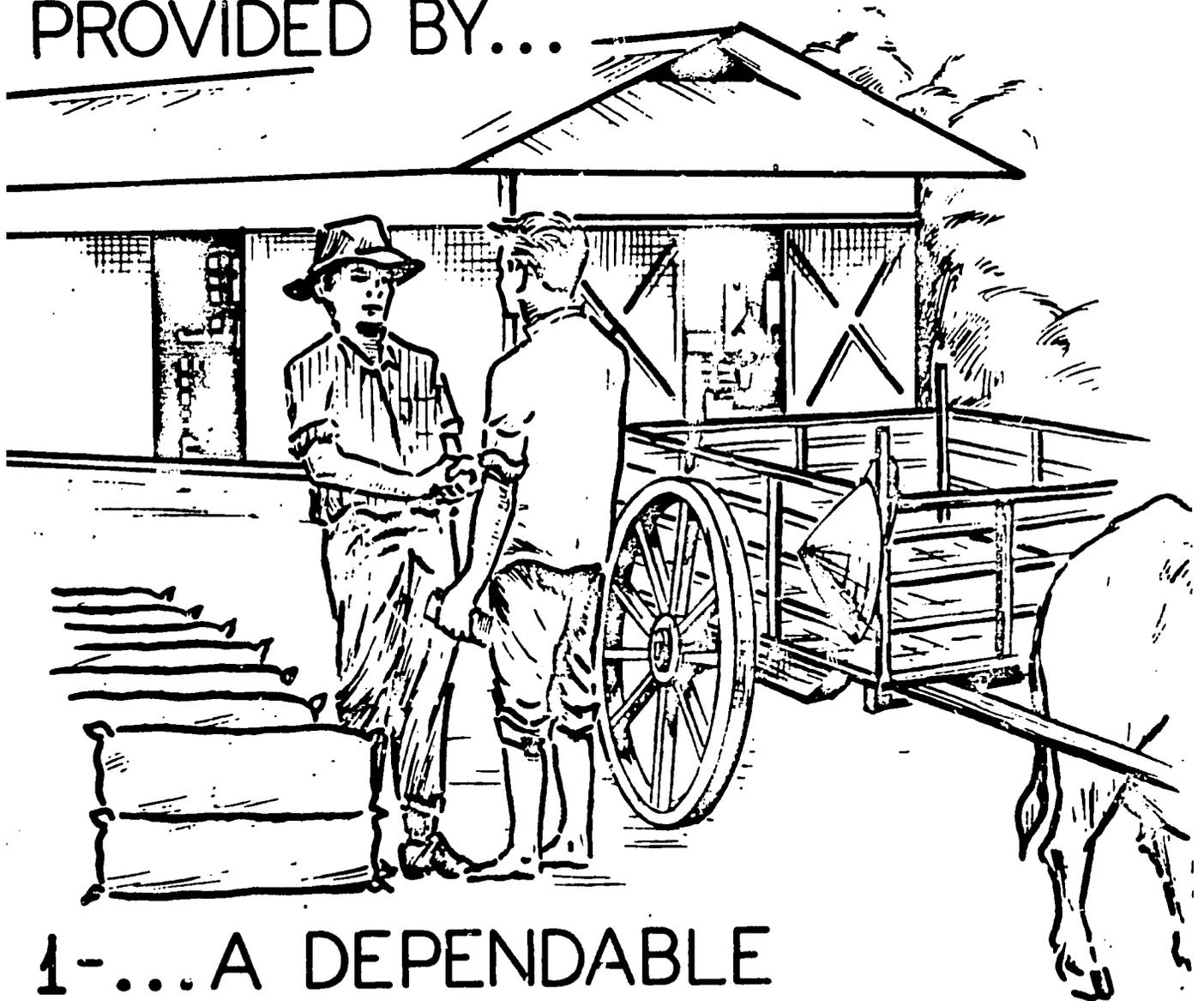
PROVIDED BY .....

1 - ..... A DEPENDABLE LOCAL MARKET -

BUT...

THE FARMER NEEDS ENCOURAGEMENT

PROVIDED BY...



1-... A DEPENDABLE  
LOCAL MARKET

2 - ..... AVAILABLE SUPPLIES -

SEED -

FERTILIZER -

INSECTICIDE -

EQUIPMENT -

close to his farm and readily available.

3 - ..... OTHER LOCAL SERVICES -

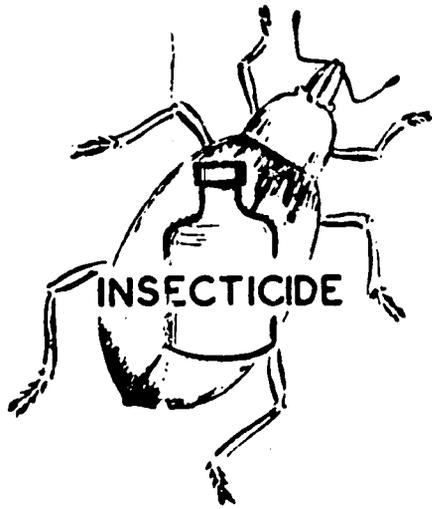
CREDIT -

:  
TECHNICAL INFORMATION -

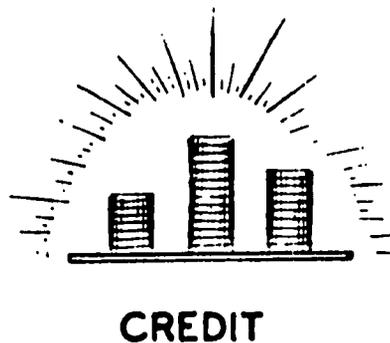
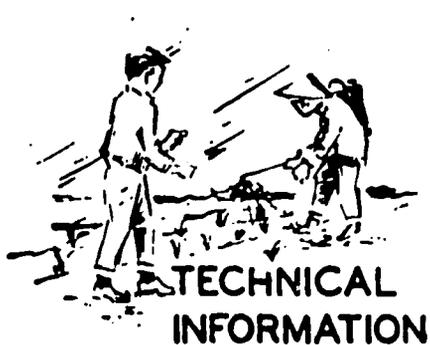
THRESHING -

and or other harvesting services.

## 2-...AVAILABLE SUPPLIES



## 3-...OTHER LOCAL SERVICES



AND THE FEED MILL MUST HAVE A CONTINUOUS SUPPLY OF QUALITY FEED GRAINS.

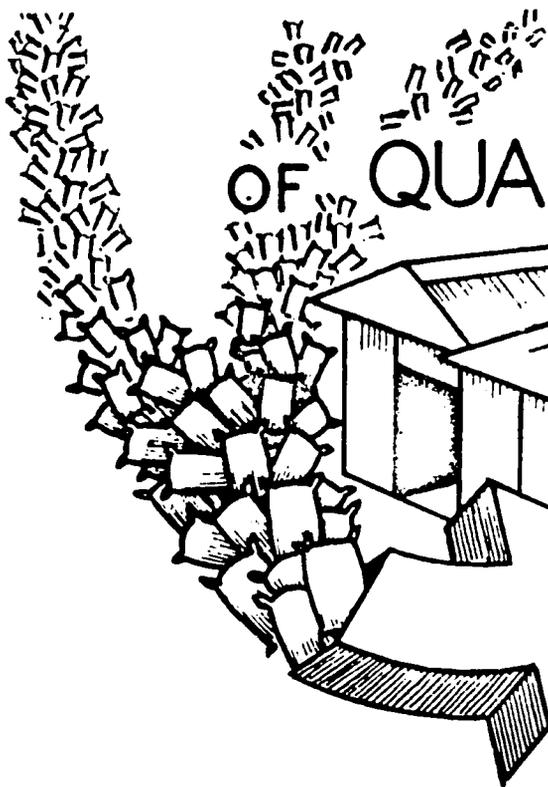
ALL OF THESE REQUIREMENTS CAN BE PROVIDED BY .....

AND

THE FEED MILL MUST HAVE . . .



A CONTINUOUS SUPPLY



OF QUALITY FEED GRAINS

ALL OF THESE REQUIREMENTS  
CAN BE PROVIDED BY →

THE COMMUNITY GRAIN DEPOT !!!!!!!

The Community Grain Depot -

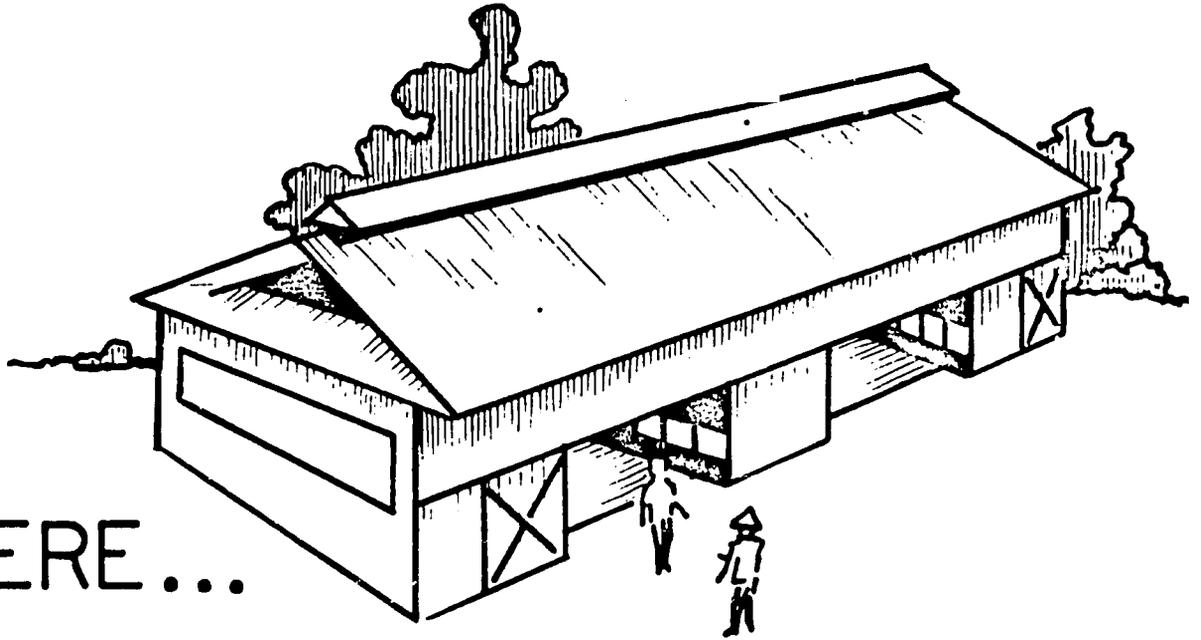
WHERE THE FARMER BUYS SUPPLIES AND SERVICES OR -

GETS CREDIT, IN-KIND -

SELLS GRAIN AND -

WHERE THE MILLER BUYS QUALITY FEED GRAINS IN THE BULK.

# THE COMMUNITY GRAIN DEPOT...



WHERE...

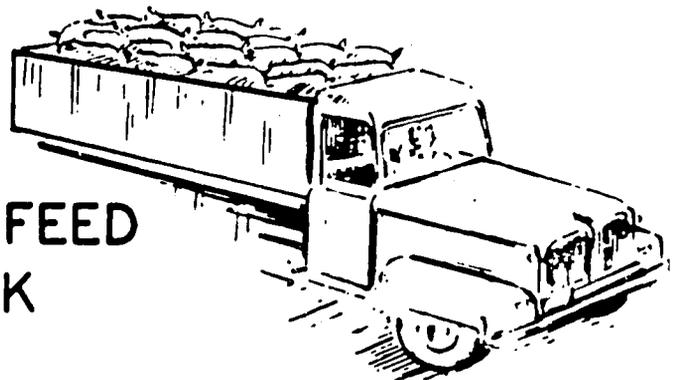
THE FARMER...



- BUYS SUPPLIES AND SERVICE OR
- GETS CREDIT IN-KIND
- SELLS GRAIN

THE MILLER...

- BUYS QUALITY FEED GRAINS IN BULK



A COMMUNITY GRAIN DEPOT WILL LOOK AND OPERATE LIKE THIS .....

Located in the Farmer's community close to the farm a long distance from the mill.

The Depot functions -

1. Selling production supplies

SEED, FERTILIZER, INSECTICIDE, SMALL HAND EQUIPMENT.

ANIMAL FEED AND HEALTH SUPPLIES AND OTHER FARMER NEEDS.

2. Processing

GRADING, THRESHING,

CLEANING, DRYING AND BAGGING AND -

3. Collection and storage

The Depot sells inputs as a distributor for seed and feed processors, fertilizer importers and others. The Manager may contract with Farmers for grain production. Seed, fertilizer, insecticide and services in the form of credit may be offered and repaid at harvest.

THE FARMER BUYS SUPPLIES.

THE FARMER BRINGS HIS HARVEST TO THE DEPOT.

THE FARMER IS PAID.

A new production cycle begins.

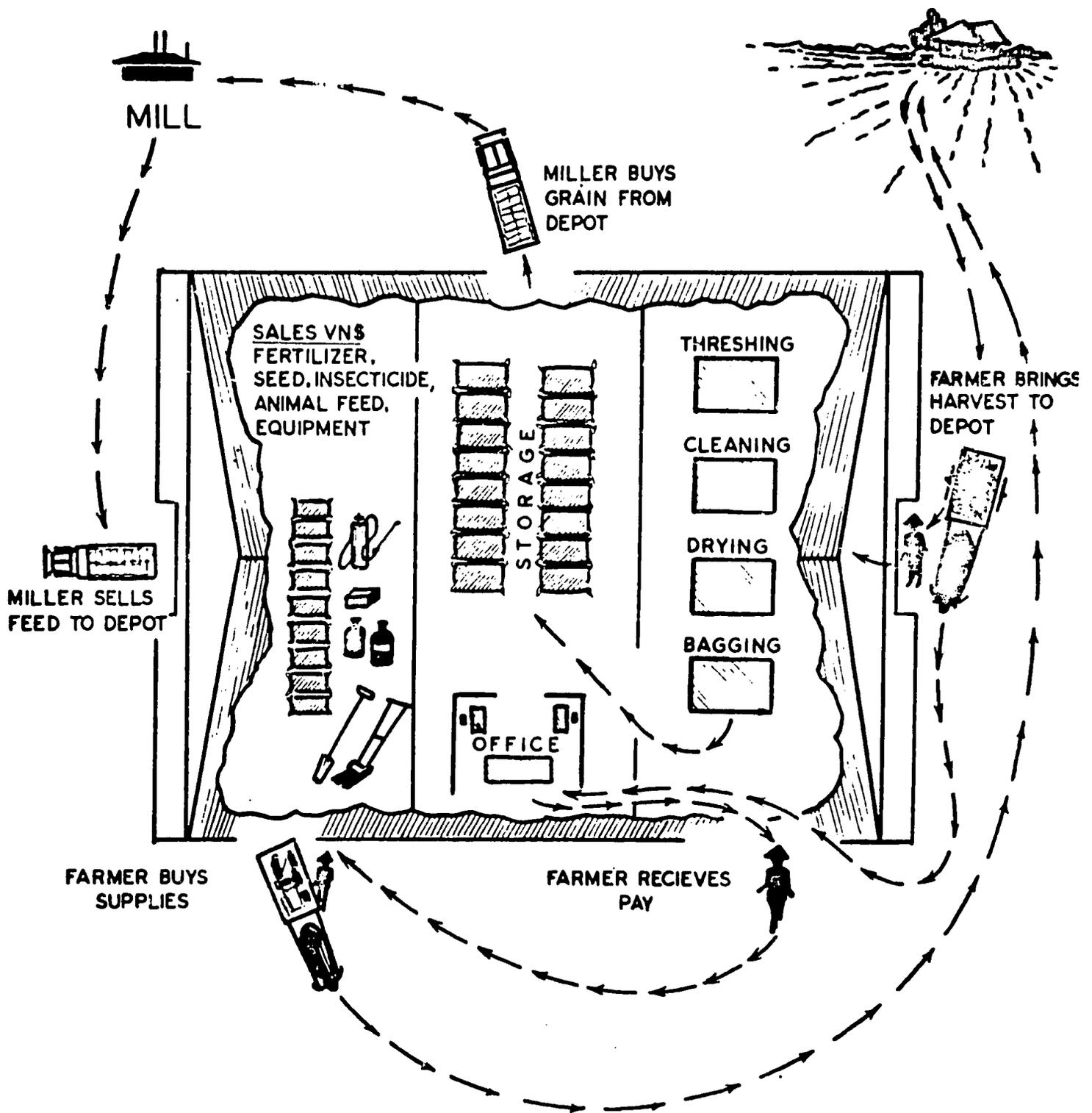
THE MILLER BUYS THE GRAIN FROM THE DEPOT.

A contract can be made between the Mill and Depot.

THE MILLER SELLS FEED TO THE DEPOT.

The Depot concept is a Multi-Crop, Multi-Purpose facility.

# A COMMUNITY GRAIN DEPOT WILL OPERATE LIKE THIS...



THE RESOURCES NEEDED .....

CAPITAL INVESTMENT

LAND, BUILDING AND EQUIPMENT -

is estimated at 11,970,000 piasters.

PRODUCTION CREDIT

production supplies are -

AVAILABLE TO THE OPERATOR AS A DEALER OR DISTRIBUTOR

These supplies can be used as production credit in-kind.

5,610,000 PIASTERS IS THE ESTIMATED NEED FOR 350 HA IN REGION III.

- PROCESSING CAPITAL

PROVIDED BY THE OPERATOR -

OR A BUSINESS LOAN FROM THE ADB OR A COMMERCIAL BANK.

6,953,500 PIASTERS IS THE ESTIMATED AMOUNT NEEDED.

- GRAIN PURCHASING CAPITAL

PROVIDED BY THE OPERATOR -

OR BY A CONTRACT WITH A FEED MILL -

OR FROM ADB IN A PURCHASING LOAN.

This amount is estimated to be 29,100,000 piasters

for 1,500 MT.

# RESOURCES NEEDED...



## PRODUCTION CREDIT (IN-KIND)

- AVAILABLE TO OPERATOR AS DEALER
- VN\$ 5,610,000\*

## PROCESSING CAPITAL

- PROVIDED BY:
    - OPERATOR OR...
    - BUSINESS LOAN FROM ADB OR COMMERCIAL BANK
- VN\$ 6,953,500\*

## CAPITAL INVESTMENT

- LAND-BUILDINGS
  - EQUIPMENT
- VN\$ 11,970,000

## GRAIN PURCHASING CAPITAL

- PROVIDED BY:
    - OPERATOR OR...
    - CONTRACT WITH MILL
    - ADB PURCHASING LOAN
- VN\$ 29,100,000\*

\* REGION III ESTIMATE - 350 HA.

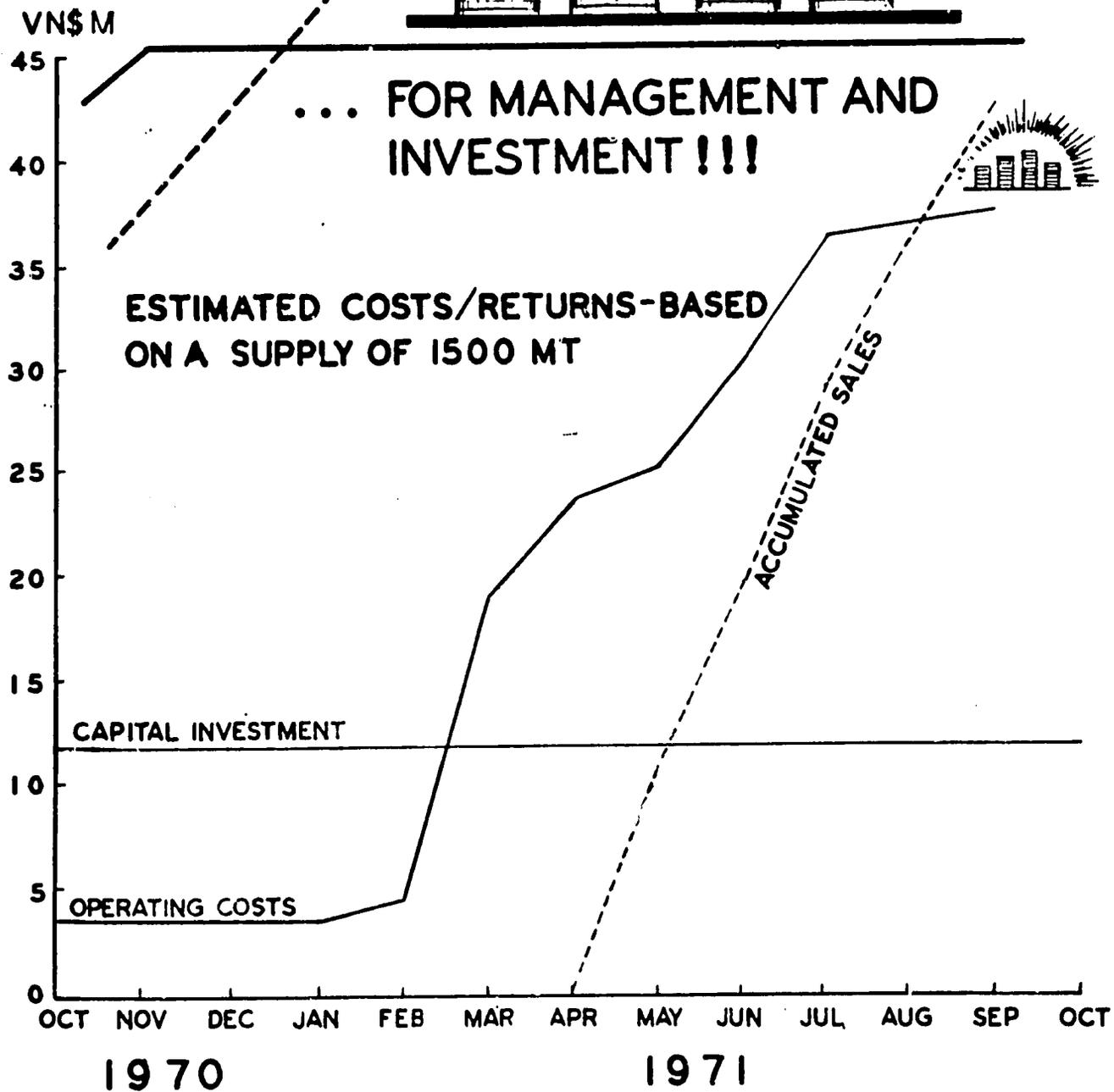
THE COMMUNITY GRAIN DEPOT WILL RETURN .....

30 TO 40% FOR MANAGEMENT AND INVESTMENT!!!!!!!

This chart shows the monthly accumulated costs and  
returns, based on 1,500 MT Feed Grain supply.

# THE COMMUNITY GRAIN DEPOT WILL RETURN...

**30-40%**



HOW TO ESTABLISH DEPOTS .....

PRIVATE BUSINESS GROUPS OR INDIVIDUALS -

WILL BUILD -

AND OPERATE -

THE COMMUNITY GRAIN DEPOTS.

# HOW TO ESTABLISH DEPOTS...



... AND OPERATE THE  
COMMUNITY GRAIN  
DEPOTS

ONE OF THE FOLLOWING GROUPS OR INDIVIDUALS

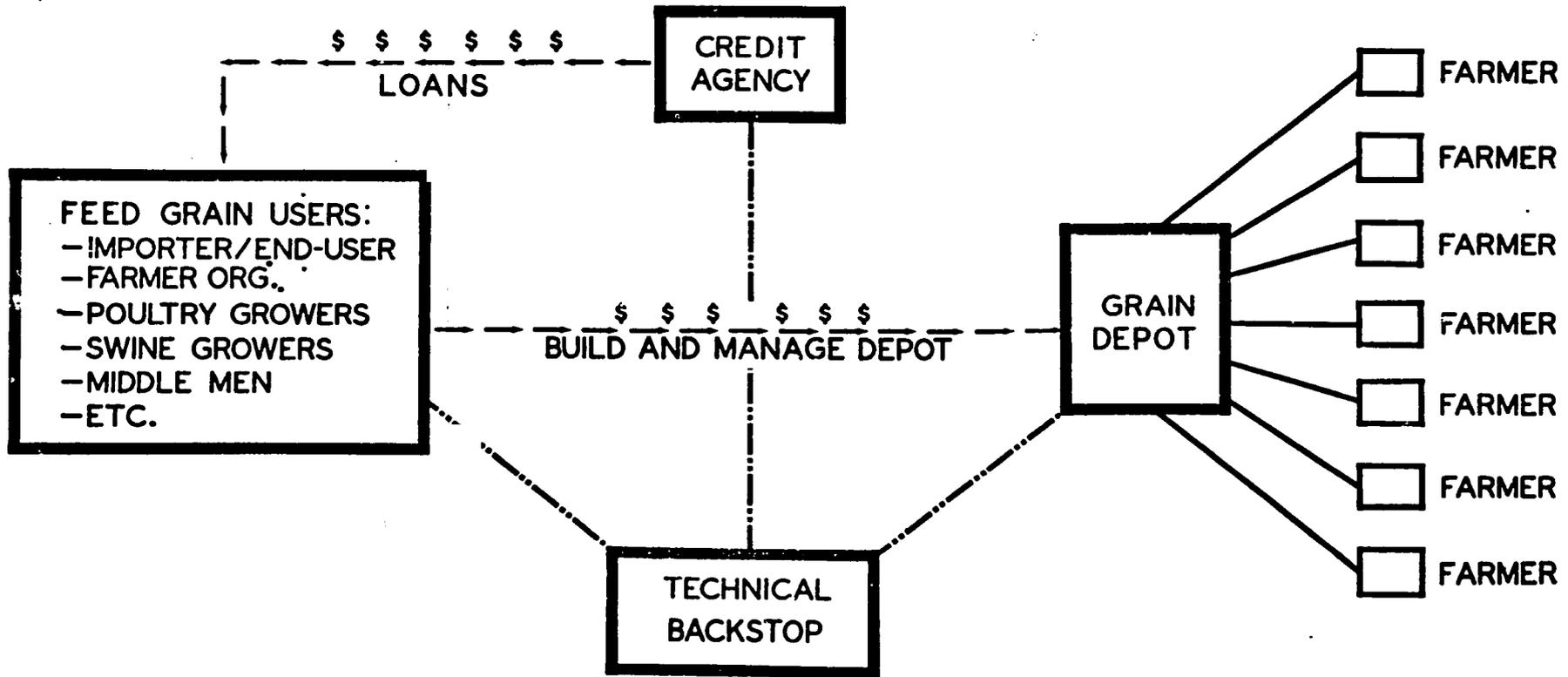
- Importer/End user
- Farmer's organization
- Poultry grower
- Swine grower
- Middlemen
- or others

could build a Grain Depot.

The Depot could contract with farmers to produce rice, sorghum, corn, soybeans, mung beans, peanuts, etc.

Also, the Depot could contract with a rice mill, feed mill or seed mill to supply the quality grains needed by these mills. The Depot then becomes a middleman, buying and selling grains and distributing production supplies at the local level.

**COMMUNITY GRAIN DEPOT OPERATION  
PROPOSED PILOT PROJECT**



**OPERATION:**

- 1 - INDIVIDUALS OR GROUPS ESTABLISH DEPOT
- 2 - COMMUNITY DEPOT PROVIDES:
  - PRODUCTION LOANS, SALES & SERVICE TO FARMER
  - MARKET FOR FARMER

**ADVANTAGES:**

- COMBINES RESOURCES
- STIMULATES FEED GRAIN PRODUCTION
- DEVELOPS FEED GRAIN MARKETING SYSTEM
- SYSTEM CAN APPLY TO OTHER PRODUCTION PROGRAMS
- CAN DEVELOP FUTURE AGRI-BUSINESS CENTERS

THE COMMUNITY GRAIN DEPOTS ARE THE 1ST STEP IN DEVELOPING A NATIONAL  
MARKETING SYSTEM.

A system to provide -

COLLECTION -

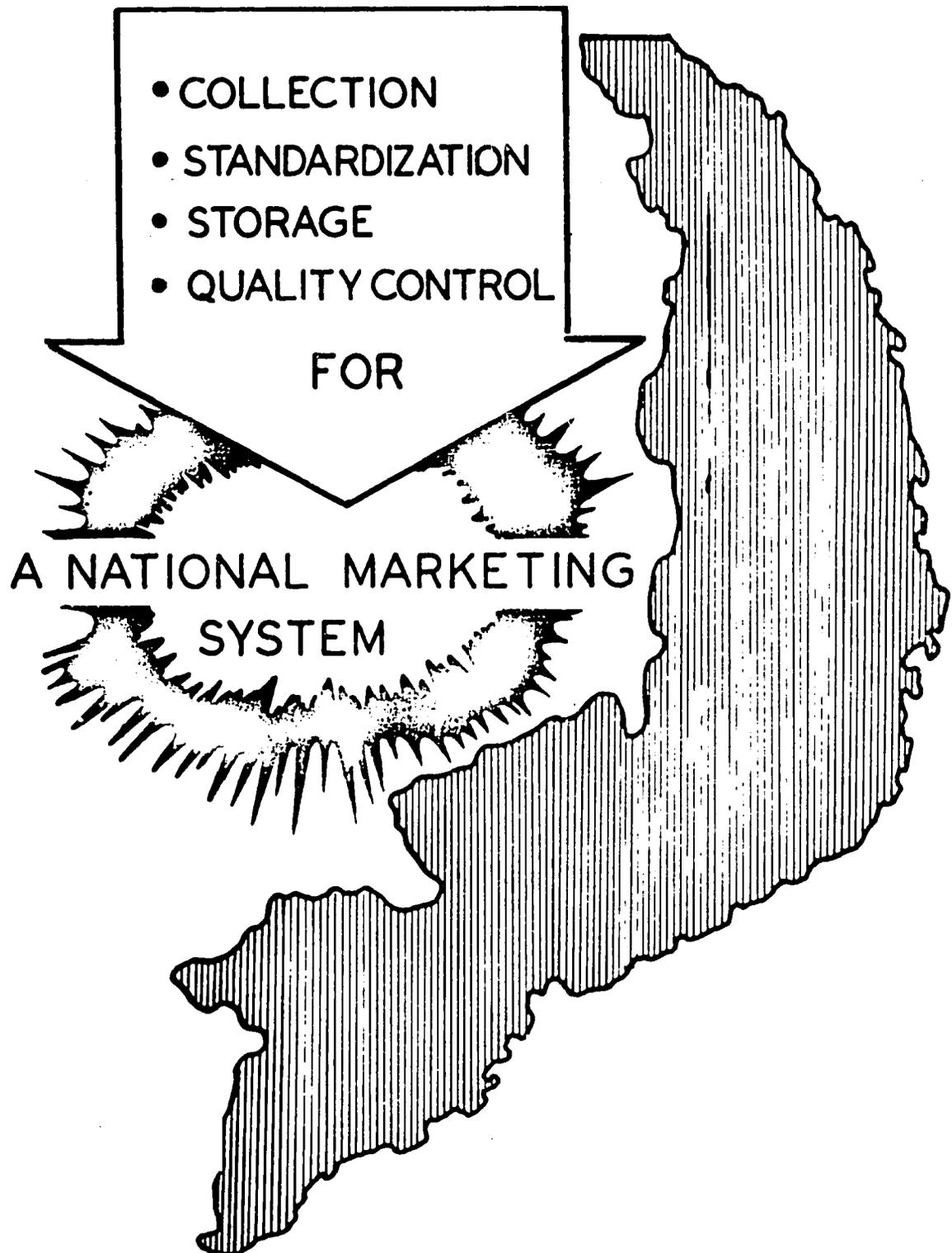
↑  
↓

STANDARDIZATION -

STORAGE AND -

QUALITY CONTROL.

# COMMUNITY GRAIN DEPOTS ARE THE 1<sup>ST</sup> STEP IN DEVELOPING...



This is a picture concept of a Depot. The building can be built with local materials.

It can be built in sections with a new section being added from time to time.

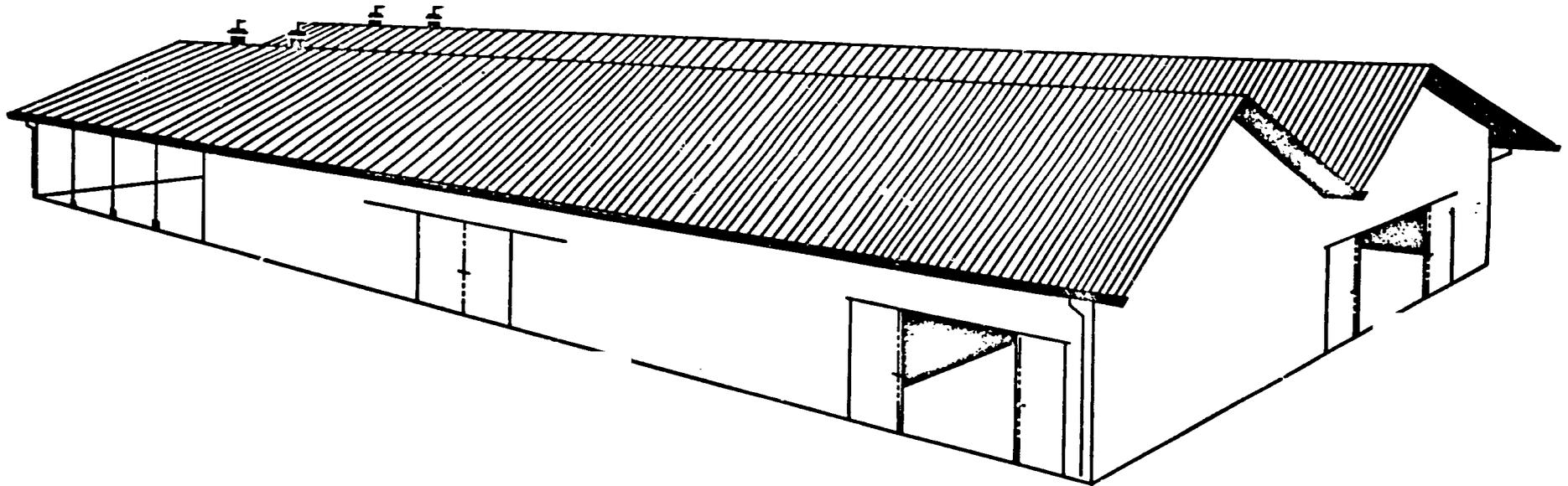
The first section to be built may be for selling production supplies.

Then a new section added as the business expands until the complete unit is in operation.

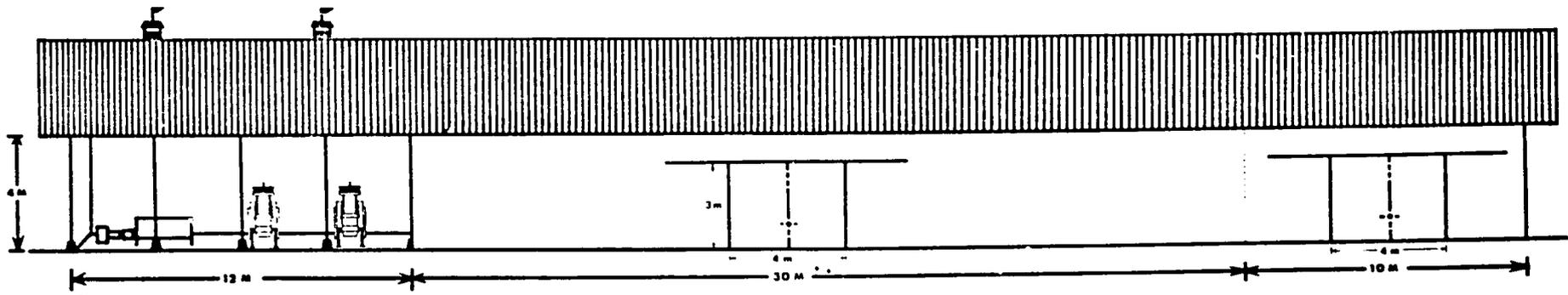
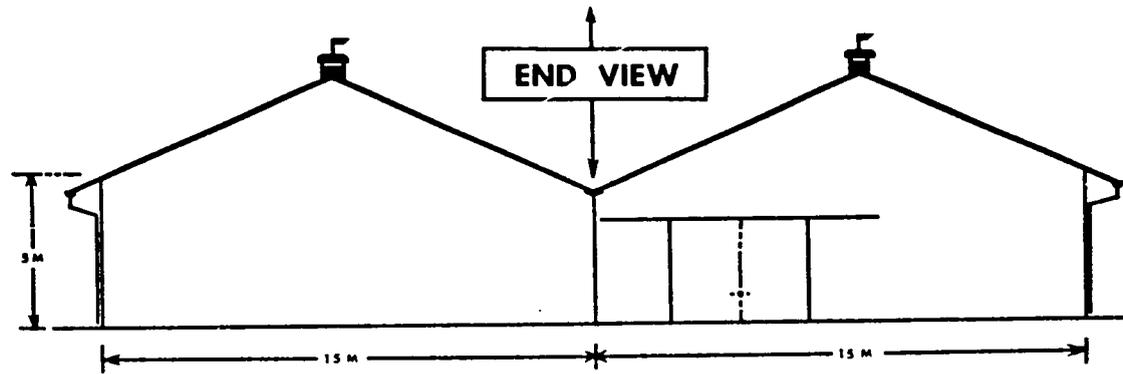
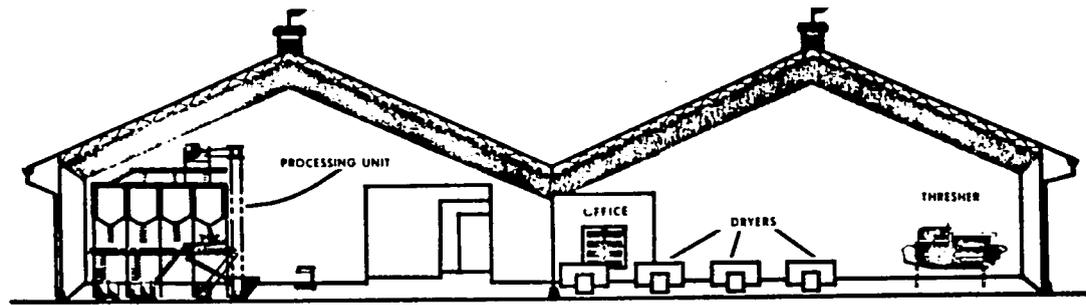
The building and equipment can be contracted through local contractors.

The contractor provides engineering, prefabricated portions of the building and either locally manufactured or imported equipment.

# COMMUNITY GRAIN DEPOT



These diagrammatic views show the front and ends of the depot including the locations of the equipment. The basic design 52 meters long by 30 meters wide has a cement floor, corrugated asbestos roofing and cement block walls. Ventilators expel part of the dust that accumulates during the processing operations. Trussed steel rafters are supported on steel pole construction. The building site can be serviced by both canal and road.

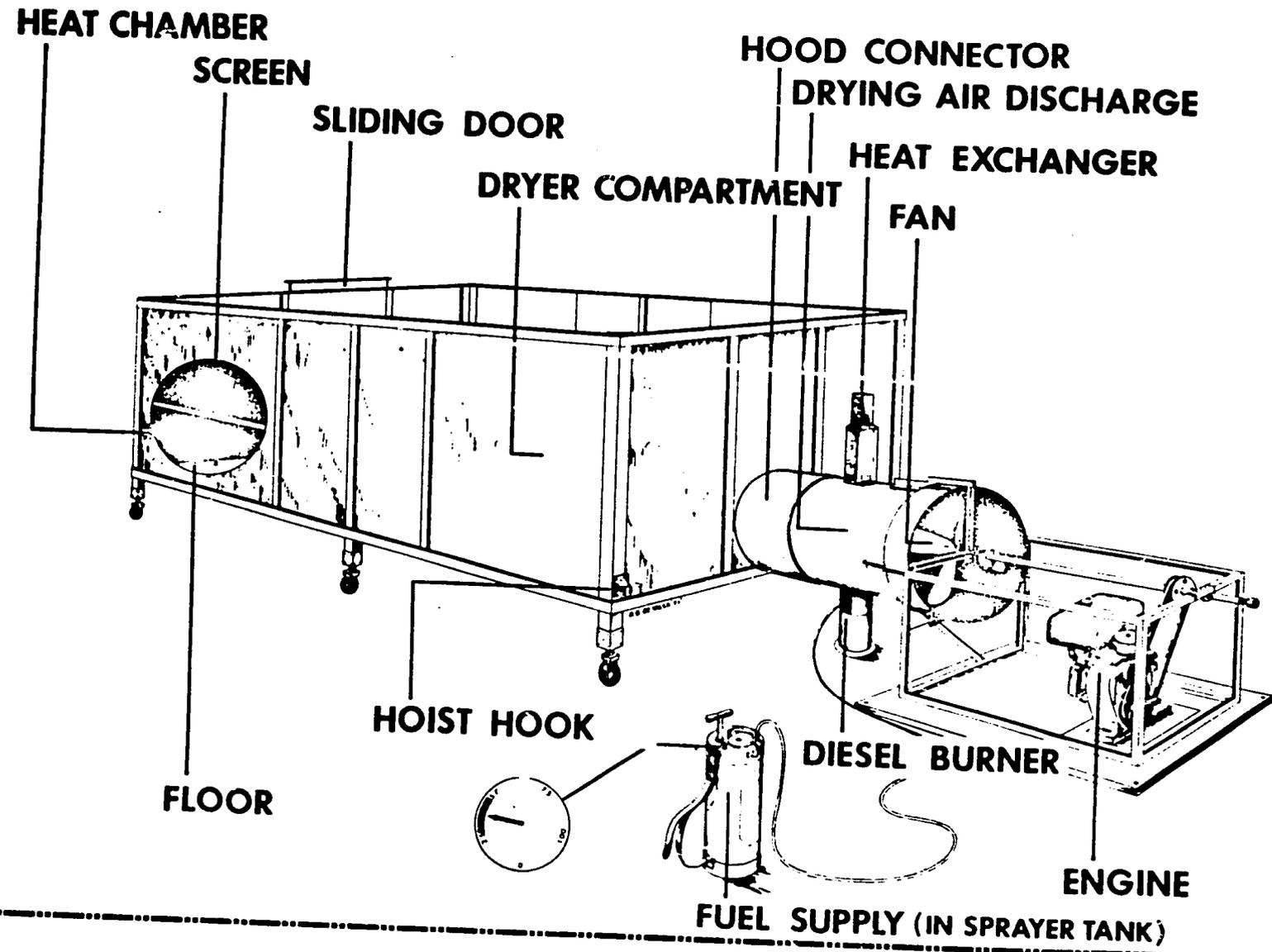


FRONT VIEW

# COMMUNITY GRAIN DEPOT

This bed type batch dryer is simple in design. However, its efficiency can be increased using labor and simple mechanics to convert it into a continuous flow dryer.

# RED DRAGON DRYER (TO DRY GRAINS)



Theoretically, processing would begin with the farmer bringing his crop to thresh, it would then be graded, weighed and purchased. The Depot processes it further in order to sell it to the mill. The processing section includes threshers, dryers (drying units are stationary. the drying beds are detachable and on wheels) a portable scale and a processing unit. The inset shows the processing unit:

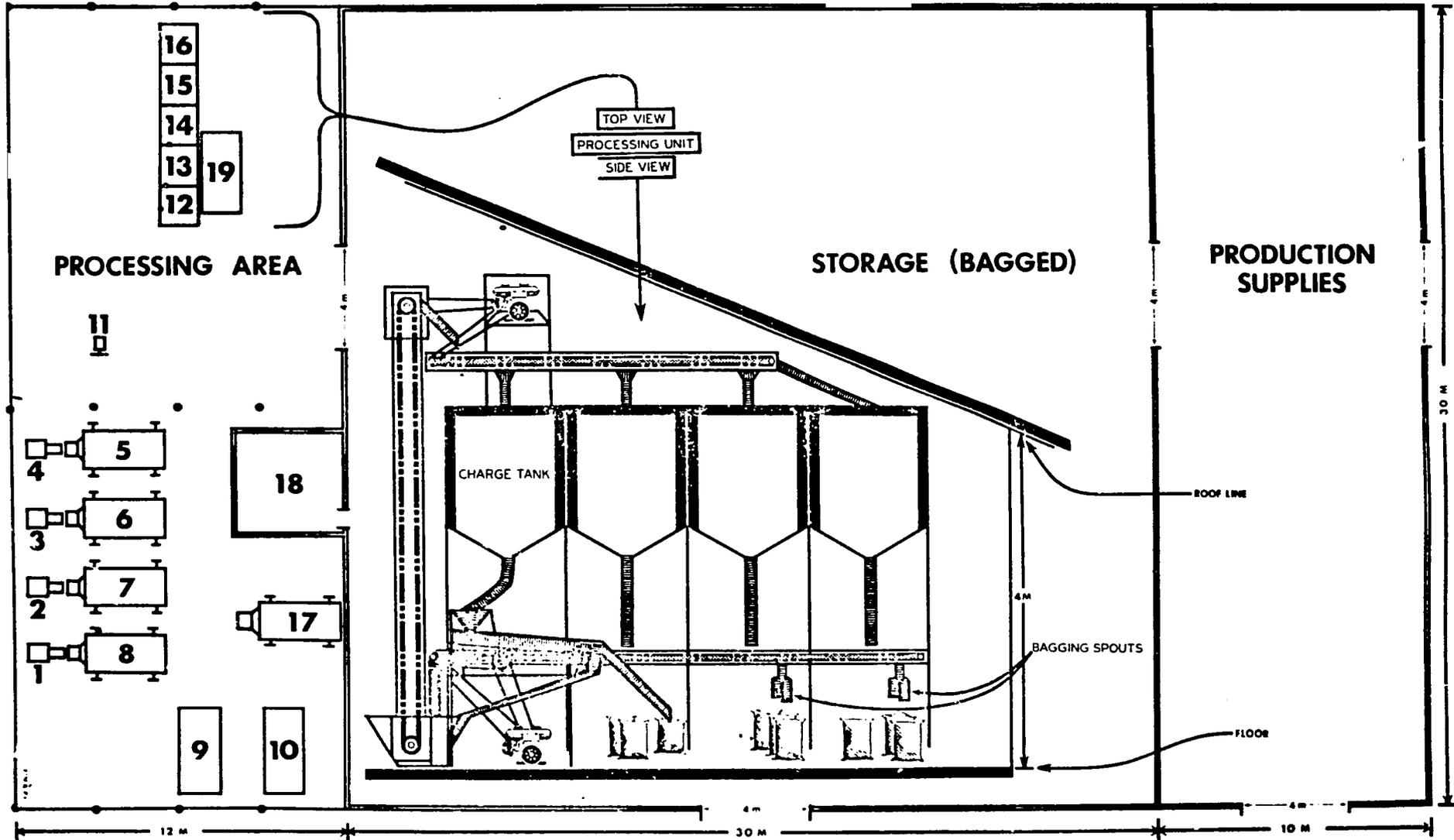
- a short bucket elevator with the receiving hopper setting on the floor.
- two conveyor belts
- four small steel tanks 3 MT each
- a cleaner-scalper
- bagging attachments

The lower conveyor belt is reversible, it and the seed cleaner empty into the elevator hopper.

If the grain has been threshed and dried when delivered to the Depot, it is dumped into the elevator hopper, elevated into one of the tanks and bagged for storage. If it needs further drying one of the dryer beds is rolled under the tank, filled and placed on the dryer unit. A relatively high temperature is used for a short period of time after which the bed is detached rolled out of the way while the grain cools, the bed is then rolled to the elevator and dumped using a chain hoist slung from a rafter. More grain for drying is then taken into the bed from the tanks. This labor intensive process converts simple mechanics into a continuous flow operation.

# COMMUNITY GRAIN DEPOT

(FLOOR PLAN W/INSET)



- |                                       |                            |
|---------------------------------------|----------------------------|
| 1-4 - DRYER UNITS                     | 12 - ELEVATOR LEG & HOPPER |
| 5-8 & 17 - DRYER BEDS (2MT CAP. EA.)  | 13-16 - BINS (3 MT. EA.)   |
| 9-10 - THRESHER                       | 19 - SCALPER-CLEANER       |
| 11 - PLATFORM SCALE (MOVABLE 500 KG.) | 18 - OFFICE (4X4 M.)       |

## THE COMMUNITY GRAIN DEPOT CONCEPT

### OBJECTIVE

1. TO PROVIDE A LOCAL MARKET FOR FARMERS' GRAIN
2. TO PROVIDE A LOCAL SUPPLY OF PRODUCTION INPUTS
3. TO PROVIDE LOCALLY, CUSTOM HARVESTING AND CONDITIONING EQUIPMENT

### FINANCE

BUILT AND OPERATED BY PRIVATE OR SEMI-PRIVATE INVESTMENT  
OPERATIONS

1. GRAIN MARKET (BUYING AND SELLING)
2. SALES OF PRODUCTION SUPPLIES
3. CUSTOM HARVESTING AND CONDITIONING EQUIPMENT

### BUILDING NEEDS

#### 1. ALTERNATIVES:

- A. EXISTING BUILDING
- B. TEMPORARY QUARTERS
- C. NEW FACILITY

#### 2. LOCATIONS:

- A. ALL OPERATIONS ONE BUILDING ONE LOCATION
- B. EACH OPERATION IN SEPERATE BUILDINGS
- C. EACH OPERATION AT DIFFERENT LOCATIONS

#### 3. CONSTRUCTION DESIGN:

- A. STORAGE AND SUPPLY AREAS ENCLOSED
- B. CONDITIONING AREA ROOFED

#### 4. MATERIALS:

- A. LOCAL
- B. IMPORTED

### EQUIPMENT NEEDS

#### 1. ALTERNATIVES:

- A. IN-COUNTRY FABRICATION, COPYING IMPORTED MODELS
- B. IMPORTED

EXCERPTS below are from the USAID "Economic and Engineering Study, Grain Storage and Marketing System, Vietnam" March 1970 produced by Wildman Agriculture Research, Inc. 3838 Sylvania Avenue, Toledo, Ohio 43623.

(1) "RURAL GRAIN COLLECTION WAREHOUSE

Although the 16 recommended silo facilities constitute the principal facility recommendations of this report, consideration should be given to the further development of the first assembly facilities for grain in South Vietnam" the Rural Grain Collection Warehouse.

(2) "SUGGESTED RURAL GRAIN WAREHOUSE

The recommended rural grain warehouse facility is designed to meet the grain assembly needs at the village or hamlet level. An attempt was made to design a facility that would serve as a blueprint for organizations and agencies (such as farmer cooperatives) or for firms that wanted to replace present buying station facilities or to construct new facilities which could serve as feeder facilities to the larger silo units.

The details of this recommended facility, which is equipped to handle either bagged grain or bulk grain, are shown in Drawing 6. This facility could be located either on a highway or waterway or could have access to both types of transport. The warehouse would be constructed primarily of local materials. The floor would be concrete and the walls would be of brick and plaster with intermittently spaced concrete columns while the roof would be constructed of a steel truss system covered with corrugated asbestos. This bird-proof and rodent-proof building would have a storage capacity of approximately 1,500 metric tons of bagged or bulk paddy.

The warehouse will be equipped to receive or load out bagged or bulk grain from or to either trucks or boats. Equipment will be provided to clean, weigh, bag, fumigate and dry the grain. The size of the warehouse can vary according to the storage needs. Drawing 6 also illustrates the flow of grain through the facility and lists the kind and capacity of the various types of equipment recommended for this facility. The estimated cost of this facility is US\$230,000."

## THE COMMUNITY GRAIN DEPOT CONCEPT

### HOW IT WORKS WHY IT'S NEEDED

The concept of the Community Grain Depot fills a need by providing two basic functions at the local level: 1) selling production supplies and services, 2) buying and selling farm production. This is a farmers market situated in the farm community. The farmer buys production inputs and sells his production at this "agri-business center." Available are supplies and services, technical information, a "cash market" and harvesting machines.

The Depot is a collection point, gathering and assembling production for prospective buyers: feed mills, rice mills, seed processing mills, oil processing plants, grain exporters, livestock and poultry growers and others. These rural granaries are the foundation or beginning of a National Marketing System to collect, standardize and store grain. They provide quality control as grain moves through marketing channels to the end users, central, terminal and export markets.

Since the Depot is near the farm, it is usually a long distance from the end user. Feed, rice, edible oil and seed mills represent the grain markets. Many Depots are needed throughout the growing areas, each designed to handle 1 - 2,000 MT of grain during each growing season. While grain is being purchased from the farmer the simultaneous processing and selling is taking place, therefore, production from 2 - 4,000 hectares can be moved through one Depot annually. More than one crop must be handled to give an economical return on the investment.

Since a major part of the Depot's business is selling production supplies, it becomes a dealer or distributor for wholesalers and processors.

Depots could be built and operated by business groups and individuals. Likely entrepreneurs might be; feed millers, farmers organizations, swine and poultry growers, rice merchants, seed processors, edible oil plants, distillers, financiers and others.

Contracts and agreements are important in developing the Depot's business. Various kinds of contracts can be made by the Depot, contracts with; a) suppliers of production inputs, b) farmers and c) the end users.

Before building a Depot, consideration should be given to several alternative methods or operations; a) a complete multi-crop and multi-purpose Depot to sell production supplies and services while assembling marketable quantities of grain for end users, b) a Depot engaged only in buying and selling grain, c) a Depot as a marketing agent for farmers, the farmer retaining ownership until the grain is sold, or d) any combination of these or other alternatives.

The type of building depends on the business or operations. The concept for a Depot\* is a building divided into storage, sales and processing areas.

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\* ANNEX I: Shows how the Depot would be built and operated; an example budget is included using estimated costs and returns.

The equipment included depends on the business operations. Equipment needs include threshers so farmers can bring their grain to the Depot for threshing. Cleaning, drying and bagging machinery is included to insure longer storage life and quality control.

The Depot can be developed in business components and the building built in sections as finances and business allows. It may have a small beginning, with additions being added over a period of time. Depots can be built by financiers and leased to people, with managerial skills, on a concession basis.

The cycle of operations begin with the manager contacting the farmer and encouraging him to do business with the Depot. He may offer the farmer production credit as credit in-kind, that is; seed, fertilizer, insecticide, etc. This credit will encourage the farmer to increase his production and may induce him to consider new production programs such as feed grains or oil seed crops. The credit would be repaid from proceeds of the crop at harvest.

Other promotional activities sponsored by the Depot might include field days, grower contests and demonstrations. The Depot should be the community center for farm information and agriculture promotion.

With a Community Grain Depot close by, the farmer has the following harvesting alternatives: a) cut the sorghum or rice heads and bring them to the Depot for threshing; b) do a rough job of threshing on the farm then bring the partially threshed grain to the Depot to complete the threshing;

c) he may thresh and dry at home bring the grain to the Depot to sell;  
d) he may pay the Depot for processing and storage of his grain and retain ownership. The nearness of the Depot to the Farmer gives him the advantages of its services, yet, does not force him into a "have-to-sell" situation.

At the time of sale, the grain is graded and weighed, a price is calculated and the farmer paid.

If the farmer is ready to sell when he brings in his harvest, a simple method to follow in pricing might begin with a sample from the lot and making the following determinations: a) amount of foreign material using dockage sieves; b) amount of moisture using a moisture tester; c) grain condition, odors or damage, may also be considered. These determinations are made with the farmer "looking on." After the grain is graded and weighed a price is calculated and the farmer is paid.

To reiterate, since the Depot is near the farm, the farmer has the following options; a) selling upon delivery, b) paying for additional processing and then selling, c) taking his grain home to store and wait for a price change.

After buying the grain, the Depot performs additional processing insuring the storage life and saleability. Methods to control insects and the absorption of moisture should be implemented. If the grain is bagged, insect damage can be controlled by mixing a small amount of

malathion with the grain at the time of bagging. To store for periods longer than 3-4 months requires drying to moisture content not in excess of 9-11% and then seal in plastic lined burlap bags. If storage is for less than 3-4 months plastic probably isn't needed, just burlap bags. Bags should be stored on pallets in neat stacks. Room should be left between stacks for inspection, insect and rodent control. Bulk bin storage may also be considered.

Why a Community Grain Depot? Forecasts show increasing numbers of swine and chickens, therefore, creating more demand for feed grains. The amounts of feed grains needed to feed the increasing numbers of pigs and chickens is based on estimated amounts per head and are shown in the enclosed data.\* Feed grains include rice, sorghum, corn and oil seed crops. Presently, the grains come from three sources; imports, rice and planned in-country sorghum and corn production. The feed grain needs as illustrated on the charts are not being met. In other words, only about 1/3 of the total 1971 need is being filled as illustrated on the chart.

Feed mills need grains to produce the formulated, balanced rations. Shown on the enclosed charts are 29 feed mills presently operating with a daily production capacity of 554 MT; more are planned to be in operation in 1971.

To assist the mills, swine and poultry growers and the grain farmers, the GVN/MLRAFD has launched a feed grains production program. Marketing is

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\* ANNEX II: Charts and graphs on estimated numbers of swine and chickens along with estimated quantities of feed grains needed. An enclosure shows location of feed mills.

part of the program and has been identified as one of the primary factors to consider in program implementation.

It goes without saying that a ready market encourages production. In retrospect to the production market needs there is also a need in most of rural Vietnam for production inputs readily available and with easy access to the farmer; the Depot fills both needs.

Still another consideration to support the Depot concept is reflected by the traditional systems of rice marketing and farm storage no longer able to cope with the production increases. This is evidenced by depressed prices at harvest in the harvesting areas while at the same time a deficit is experienced in the consuming areas. The Depot with its storage and marketing facilities will help to relieve this situation by opening new channels for grain movement.

The concept of the Community Grain Depot is to create a system that encourages production, sells production supplies, offers harvesting services, buys the farmers production and collects marketable quantities of grain for prospective buyers.

ANNEX I

COMMUNITY GRAIN DEPOT

ATTACHMENTS

**\*1 -- Cost of Building:**

a.	Storage area == cement/brick with cement sheet roofing 1,000 MT capacity or 20,000 50kg/bag (1MT/M <sup>2</sup> ) 30 m x 40 m - w/4m side walls = 1,200 m <sup>2</sup> floor space <u>VN\$7,000/m<sup>2</sup> floor space</u>	VN\$ 8,400,000
b.	Working area -- slab floor, open sides, metal roof 10m x 20m - w/4m eave height = 200m <sup>2</sup> floor space <u>VN\$3,000/m<sup>2</sup> floor space</u>	600,000
	Total Building .....	VN\$ 9,000,000

**\*2 -- Cost of Equipment:**

2	- 1 MT/hr (rice, sorghum) thresher	- VN\$1,000,000	
1	- 400kg platform scale	- 40,000	
3	- 2 MT/hr dryer	- 1,000,000	
1	- "Farm Type" moisture tester	- 20,000	
1	- set sorghum dockage sieves	- 4,000	
1	- set rice dockage sieves	- 6,000	
			VN\$ 2,070,000
	Miscellaneous Equipment		<u>500,000</u>
	Total Equipment .....		VN\$ 2,570,000

**\*3 -- Depreciation on building**

Original cost ÷ number years life

ex. VN\$9,000,000 - cost of the building  
÷ 20 - years  
VN\$ 450,000 - depreciation/year



RETURNS:

Sorghum #1. (bagged VN\$25,480/MT x 1,050MT)	VN\$ 26,754,000
#2 (bagged VN\$23,480/MT x 450MT)	10,566,000
Sorghum Handling Fee (VN\$2,000/MT x 1,500MT)	3,000,000
Supplies Handling Fee's (16% x VN\$5,610,000)	897,600
Interest on Production Credit (2%/mo. x 3mo x VN\$5,610,000)	<u>336,600</u>
Total Sales FOB Depot .....	<u>VN\$ 41,554,200</u>

1. Sales minus cost = return to owner for family labor management and return on investment.
2. Return to owner divided by capital investment = percent return on capital investment
3. VN\$41,554,200 - sales  
    - 37,318,600 - costs  
    VN\$ 4,235,600 - for family labor-management-investment
4.  $11,970,000 / \frac{.354}{4,235,600.000} = 35.4\%$  return on capital investment

Compiled by: TLWilson  
revised 3 Oct 70

C O S T S

Threshing	= 3 man hr/MT	- - - - -	VN\$ 120
Cleaning	- 3 man hr/MT	- - - - -	120
Drying	- 8 man hr/MT	- - - - -	320
Bagging	- 5 man hr/MT	- - - - -	200
Handling	- 6 man hr/MT	- - - - -	<u>240</u>
Total Labor/MT			- - - VN\$1,000

Bag (burlap with plastic liner & string)/MT	- - - - -	VN\$ 1,500
Power (electricity, gas, oil)/MT	- - - - -	1,000
Pesticide/MT	- - - - -	<u>800</u>

Labor/MT	- - - - -	VN\$1,000
Supplies	- - - - -	2,300
Power	- - - - -	<u>1,000</u>
Total/MT	- -	<u><u>VN\$3,300</u></u>

TLWilson: 7/10/70

GRAIN DEPOT BUDGET

CAPITAL INVESTMENTS:

Land	VN\$	400,000	
Building* (1)		0,000,000	
Equipment* (2)		2,570,000	
Total Investment .....			VN\$ 11,970,000

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FIXED COSTS:

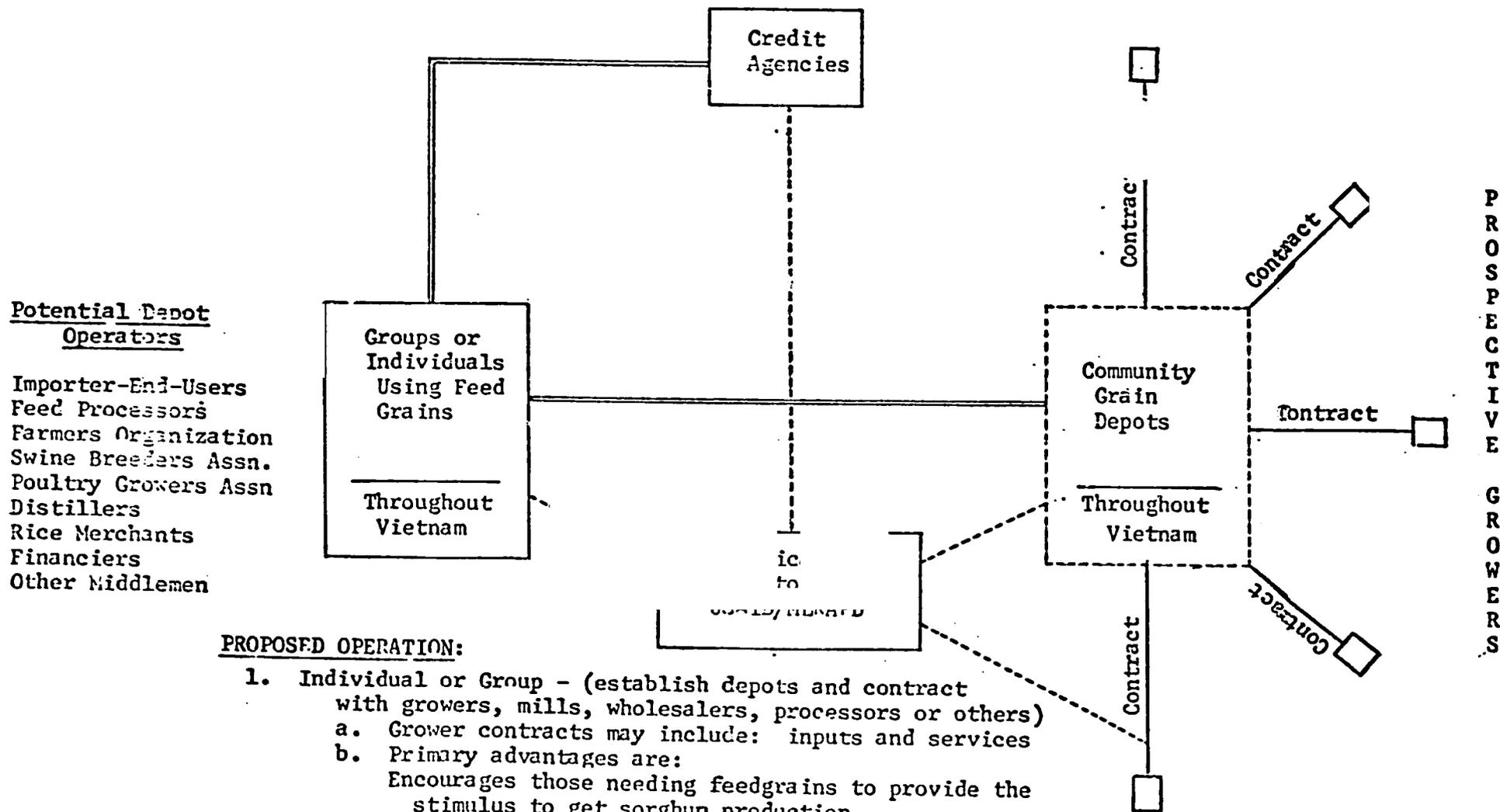
Depreciation on Building* (3)	VN\$	450,000	
Depreciation on Equipment* (4)		514,000	
Property Taxes (0.05% of value)		54,275	
Insurance (1.5% of value Bldg & Equip)		156,825	
Building Repair(1% of cost)		90,000	
Total Fixed Costs .....			VN\$ 1,265,100

OPERATING COSTS:

Main Crop Sorghum			
#1 (700MT x VN\$20,000/MT)	VN\$	14,000,000	
#2 (300MT x VN\$18,000/MT)		5,400,000	
Ratoon Crop Sorghum			
#1 (350MT x VN\$20,000/MT)		7,000,000	
#2 (150MT x VN\$18,000/MT)		2,700,000	
Total Grain Costs .....			VN\$ 29,100,000
Labor (VN\$1,000/MT x 1,500MT)	VN\$	1,500,000	
Supplies (bags, pesticide, etc. VN\$2,300/MT x 1,500MT)		3,450,000	
Power (electricity, gas, oil, etc. VN\$1,000/MT x 1,500/MT)		1,500,000	
Shrinkage (1.2% - VN\$291/MT)		436,500	
Business License (0.001% gross sales or VN\$27/MT)		40,000	
Equipment Repair (1% of cost or VN\$18/MT)		27,000	
Total Processing Costs .....			VN\$ 6,953,500
TOTAL GRAIN COSTS: (FOB Depot)			<u>VN\$ 37,318,600</u>

\*Attachments

MECHANICS TO ESTABLISH COMMUNITY GRAIN DEPOT



PROPOSED OPERATION:

1. Individual or Group - (establish depots and contract with growers, mills, wholesalers, processors or others)
  - a. Grower contracts may include: inputs and services
  - b. Primary advantages are:
    - Encourages those needing feedgrains to provide the stimulus to get sorghum production
    - Provides the foundation for developing a new grain marketing system as outlined in the Wildman report
    - Provides the possibility for developing "Agri-Business Centers"

ANNEX II

COMMUNITY GRAIN DEPOT

Vietnam: Estimated Swine Numbers & Feed Grain Requirement - 1968-75

Year	Local Swine 1000 hd	Feed Grain Requirement @ 180K/year MT	Commercial Swine 1000 hd	Feed Grain Requirement @ 900K/year MT	Total	
					Number 1000 hd	Feed Grain Requirements 1000 MT
1968	1,850	333,000	1,703	1,532,700	3,553	1,866
1969	1,995	359,100	1,913	1,721,700	3,908	2,081
1970	2,230	401,400	2,068	1,861,200	4,298	2,263
1971	2,280	410,400	2,447	2,202,300	4,727	2,613
1972	2,400	432,000	2,799	2,519,100	5,199	2,951
1973	2,460	442,800	3,259	2,933,100	5,719	3,376
1974	2,508	451,440	3,781	3,402,900	6,289	3,854
1975	2,556	460,080	4,363	3,926,700	6,919	4,387

Vietnam: Estimated Poultry Numbers & Feed Grain Requirement - 1968-75

Year	Broilers		Layers		Parent Stock		Local Chickens		Total Number of Chickens	Total Grain Requirements
	No.	Grain Req. @ 3K/head	No.	Grain Req. @ 50K/head	No.	Grain Req. @ 53K/hd.	No.	Grain Req. @ 0.7K/hd.		
	<u>1000hd</u>	<u>MT</u>	<u>1000hd</u>	<u>MT</u>	<u>1000hd</u>	<u>MT</u>	<u>1000hd</u>	<u>MT</u>	<u>1000hd</u>	<u>1000 MT</u>
1963	NA	-	230	11,500	NA	-	20,005	14,000	20,235	26
1969	5,919	17,757	1,165	58,250	100	5,300	20,048	14,034	27,232	95
1970	7,340	22,020	2,100	105,000	125	6,625	21,000	14,700	30,565	148
1971	17,085	51,255	3,365	168,250	210	11,130	20,000	14,000	40,660	245
1972	20,376	61,128	4,050	202,500	265	14,045	19,000	13,300	43,691	291
1973	24,520	73,560	4,745	237,250	320	16,960	18,000	12,600	47,585	340
1974	29,500	88,500	5,700	285,000	380	20,140	18,000	12,600	53,580	406
1975	35,000	105,000	6,250	312,500	450	23,850	17,500	12,300	59,200	454

ESTIMATED PADDY PRODUCTION AND AMOUNTS UTILIZED IN FEEDS

Years	MLRAFD/DGA Est. 5 year Planning	Paddy Equivalent Used for Feed Wildman, pp. 203 16% of Production
69/70 1970	5,115,000.	818,400
70/71 1971	5,799,500	927,920
71/72 1972	6,717,000	20% 1,343,400
72/73 1973	6,941,000	20% 1,388,200
73/74 1974	7,162,000	20% 1,432,400
74/75 1975	7,380,000	20% 1,476,000

Compiled 10/9/70  
TAMPAON/Cropa

Charles:

Between 3:30 and 4:30 yesterday I had an interesting positive exchange with Thomas L. Wilson in NE/TECH/AGR. I had arranged to see him in reference to the table of informational projects in agriculture, DTM has asked for.

The session did not prove productive of NE projects with informational components and/or targets--they apparently don't have any. Wilson actually wanted to talk in bigger terms about getting information out and available. He had two items which he had previously prepared--both on food grain losses: one done in Nepal and one in Viet-Nam. Both items had been requested several times from other AID sources, and he had had to Xerox copies to meet the demand. He had heard about our system, and accordingly figured that that is where his titles should go.

Attached please find one of these. He would like to have it announced in ARDA and put into the resource-system. The other one, he will send down later when a better copy has been located. Do you have problems with this? If you can agree to accept this accompanying piece please put your "In ARDA" note on it and route it back. When the other one comes through, I will route that one in as well.

I can't claim to have brought NE "into line" in toto. But at least we don't have enemies in NE/TECH/AGR.

JohnLH

8/20/76

*Agriculture  
crop storage*