Inter-American Institute of Agricultural Sciences of the OAS

Training and Research Center

Turrialba, Costa Rica

Report on the Use of Visual Aids for Teaching Agricultural Marketing

by

Karl Wierer

FAO Marketing Expert

August, 1969

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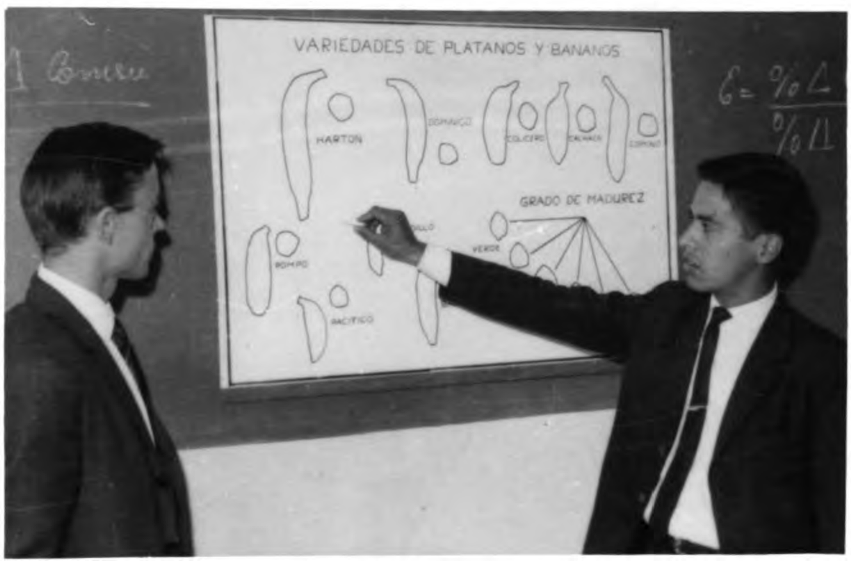
REPORT ON THE USE OF VISUAL AIDS FOR TEACHING AGRICULTURAL MARKETING



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C O N T E N T S

I. INTRODUCTION

In the last years, different types of visual aids for teaching appeared. This material can be a great help in completing verbal explanations of a certain scientific or practical problem. Beside this, the visual aids are an excellent means to attract the interest of students for a special aspect.

The use of different types of teaching material will give the class a certain dynamic. Students do not have to follow permanently the speech of the professor and to write down important aspects. They will learn more to think, if a problem is exposed in a picture, a drawing etc., because they do not have to copy it. However, an excess of visual aids can create a strong decrease in concentration. Visual aids are not a compensation for a good speech, butan appropriate complementation for difficult or attractive aspects.

Agricultural marketing is an excellent field for visual aids. The word "marketing" has already a meaning of "efficiency", which involves that the theoretical discussion is oriented to the practical problems. With the visual aids, this objective might be easier reached.

This report includes only some important types of visual aids, of which the author gained some experience. In the following pages are treated especially the charts, slides , product samples and a special blackboard. The main aspects which will be discussed are the subject matters used for visual aids, size of the material and explanations, the symbols and drawings to be used and some aspects of color combination. Together with this report, a catalogue of visual aids was prepared, which might be a guide

for similar efforts. The numbers in parenthesis which appear in the following pages of the text, refers to the number of the respective teaching material in the mentioned catalogue.

II. TYPES OF VISUAL AIDS

A. Charts

This teaching material can be a great help, above all, for the theoretical understanding of the subject matter. The charts are for permanent use and can be stored in a large box, or hanged up in a special place.

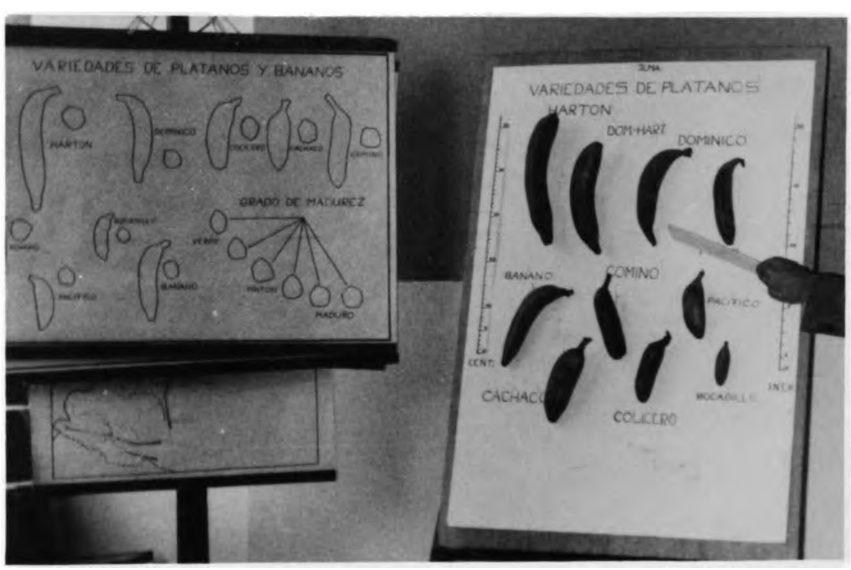
The most important technical questions for preparing such teaching material are the following:

1. Subject matter to be presented
2. Size of the chart
3. Size of letters for titles or explanations
4. Drawings or symbols to be used
5. Use of colors

The subject matter depends much on the main objective of the class. However, it seems to be more useful to present the theoretical aspects or a basic analysis which can be used to explain methodological aspects. If a concrete analysis of a certain marketing problem will be shown, a lot of explanations will be needed, which may disturb the clear and rapid understanding of the matter treated on the chart. Beside this, charts with very specific aspects are for a limited use only.

For teaching a matter like "marketing and market analysis", the following collection of charts might be of guide:

General marketing (1/18, 1/26, 1/38)	2
Market, general analysis (1/15, 1/43)	2
Marketing, specific aspects	
Marketing functions (1/1, 1/23, 1/46)	10
Marketing organization (1/51, 1/10)	8
Marketing services (1/18)	3
Marketing channels and margins (1/13)	2
Efficiency measurements (1/17, 1/19)	3
Market analysis, specific aspects	
Supply (1/4)	2
Demand (1/7, 1/9, 1/20)	4
Prices (1/5, 1/25, 1/52)	5
Projections (1/12)	6
Total	47



This collection might be completed by some 4 charts about macroeconomics and production economics (1/2, 1/29) and 5 to 10 charts about international trade (1/33, 1/47). If the latter aspects will be the main objective of the class, the number of charts required will be higher.

The most appropriate size of a white wall paper is as follows:

Length	90 to 110 centimeters
width	60 to 80 centimeters

If the maximum distance between students and blackboard will not pass 20 to 25 meters, the following sizes for written letters can be recommended:

For main titles	3 to 5 centimeters altitude and 3 to 4 millimeters thickness of letters.
For secondary titles or explanations	1 1/2 to 2 1/2 centimeters of altitude and 2 to 3 millimeters thickness of letters.

One of the most important questions are the symbols or drawings used to explain certain problem. For the aspects of market analysis, it mainly may be used graphs with differente types of curves, e.g. a demand-income or a price-supply curve. For the marketing functions, some symbols of products, equipment or buildings are more explanatory (1/8, 1/11). It does not seem necesary to draw the matter with all its details, but on the other hand, the abstraction should not be too extense, in order to recognize the problem treated. It is not useful to draw too many symbols, but any relation between two factors can be well shown in varying the size of symbols. Also an accumulation of a big number of the same symbol can be very illustrative.

In respect to the colors, the most effective combination is of three different ones. A one-color graph, generally with black letters or drawings, is not very attractive, because there is less difference to the mostly monotone colored class-rooms and there is no dynamic within the graph. A change of color is mostly associated with a current flow, especially if colors will change from dark to clear ones or vice-versa. An excess of colors should be avoided in any case, because too many colors gives too much individuality to each single aspect and do not permit to form a complex idea about the respective problem. There is no need to draw the symbols with their original color, only among different groups of things, the color can be changed. Some of the most attractive color combinations are the following:

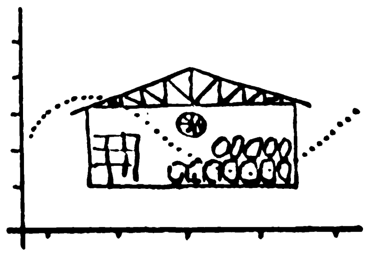
Red - blue - black
Yellow - green - black
Red - blue - green
Orange - violet - black
Red - green - yellow

The best two-color combinations are red-blue, yellow-green, orange-violet and red-black. The brown color is not well accepted because of its small difference to red or green. In some special cases, a red-grey combination can be well used, but grey should not be included in a three or more color picture. Within the titles or descriptions, some main words or aspects can be written in a different color than the rest of explanations. The main word of the problem is often written with red color and the others with black one. If there are groups of things with different colors, the respective explanations should have the same color than the drawing. For graphs with different curves, there should be drawn in red

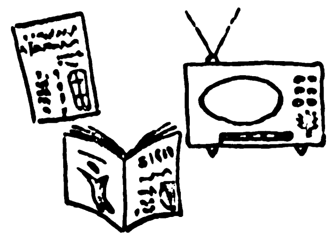
QUE PUEDE HACER EL

PARA EL **GOBIERNO**

MERCADEO



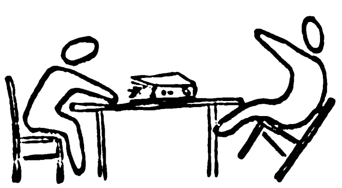
ESTABILIZACION DE PRECIOS



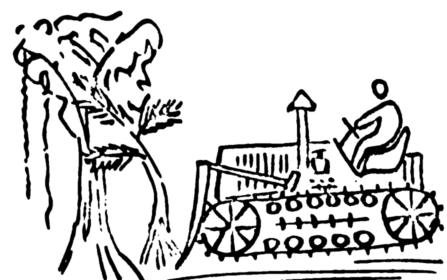
INFORMACION DE MERCADOS

NORMAS DE CALIDAD

EXTENSION EN CULTIVOS COMERCIALES

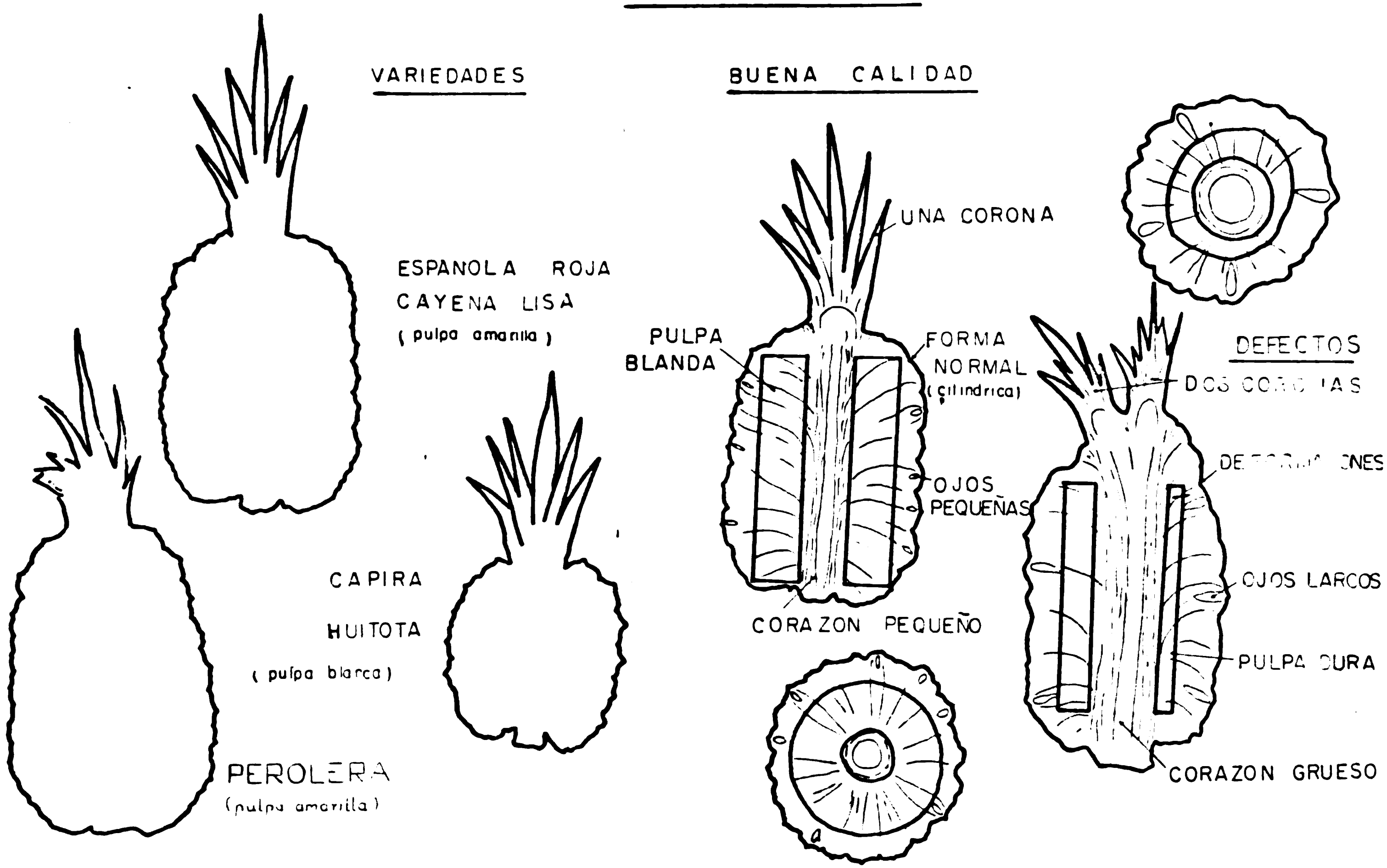


FINANCIACION DE INVERSIONES EN MERCADEO



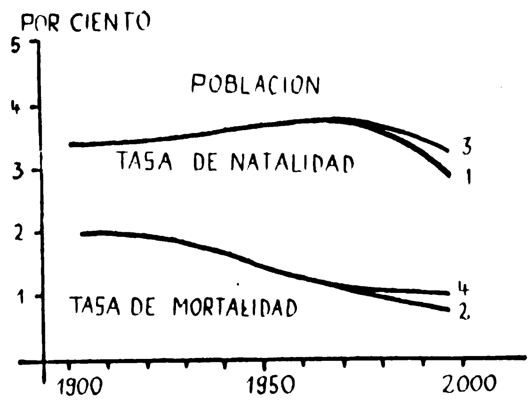
CONSTRUCCION DE CAMINOS VECINALES

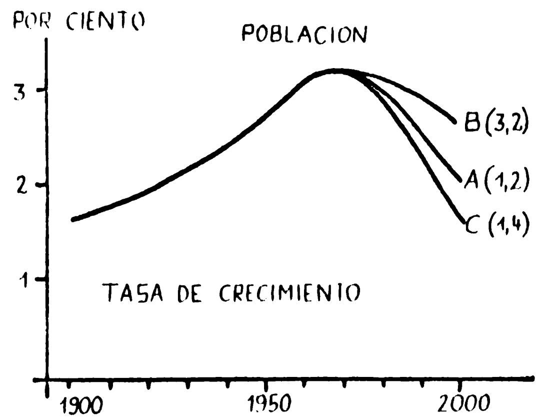
PIÑAS

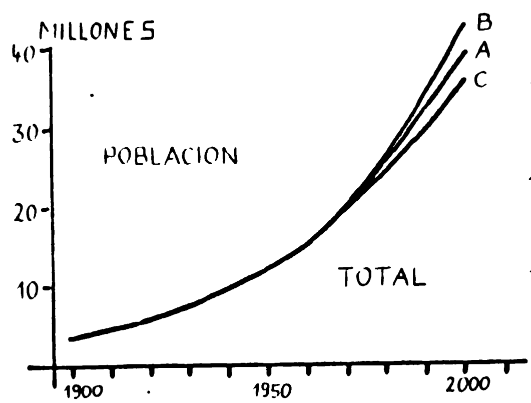

VARIEDADES
ESPANOLA ROJA
CAYENA LISA
(pulpa amarilla)
CAPIRA
HUITOTA
(pulpa blanca)
PEROLERA
(pulpa amarilla)
BUENA CALIDAD
UNA CORONA
PULPA BLANDA
FORMA NORMAL
(cilindrica)
OJOS PEQUEÑAS
CORAZON PEQUEÑO
DEFECTOS
OJOS LARCOS
CORAZON GRUESO

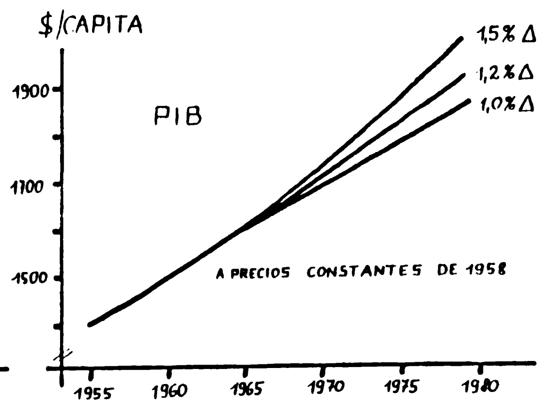
PROYECCIONES

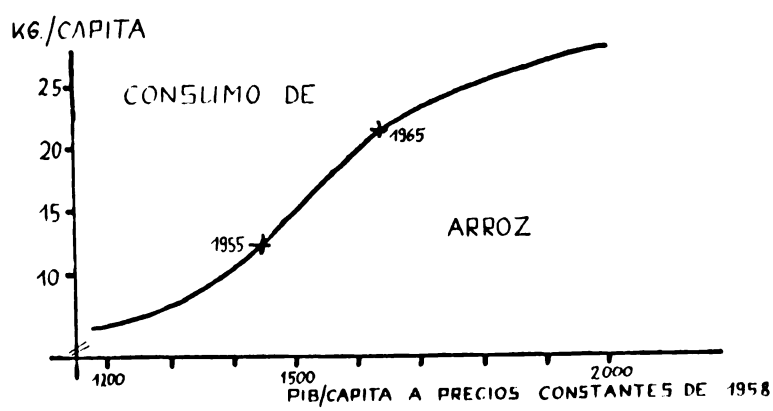
DE LA POBLACION, DEL INGRESO Y DEL CONSUMO DE ARROZ EN COLOMBIA





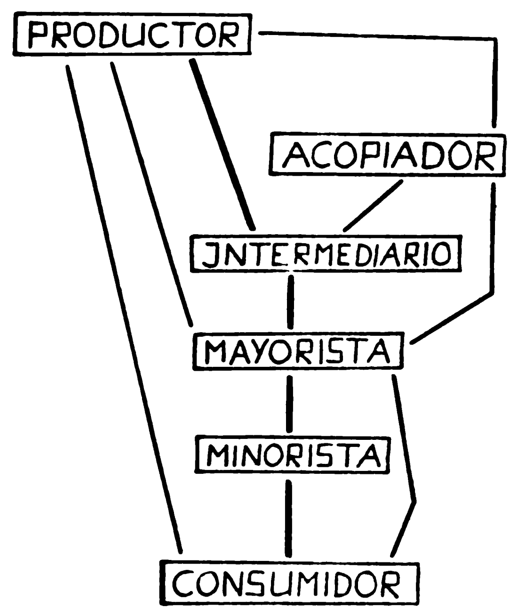




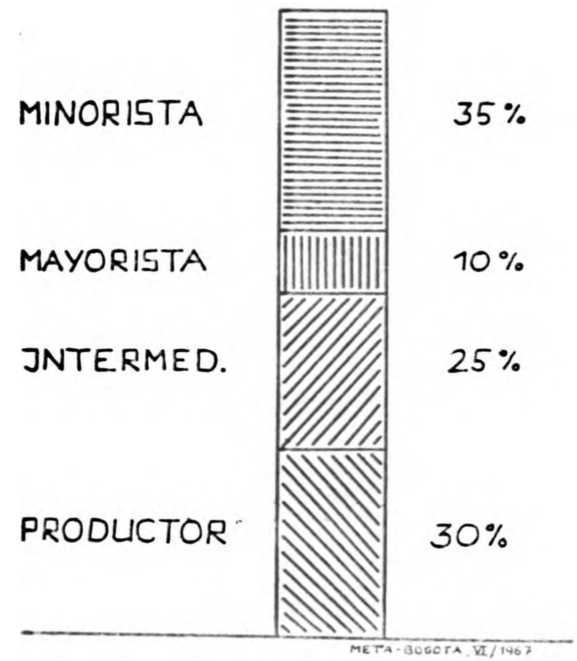


MERCADEO DE PLATANOS

CANALES DE COMERCIALIZACION

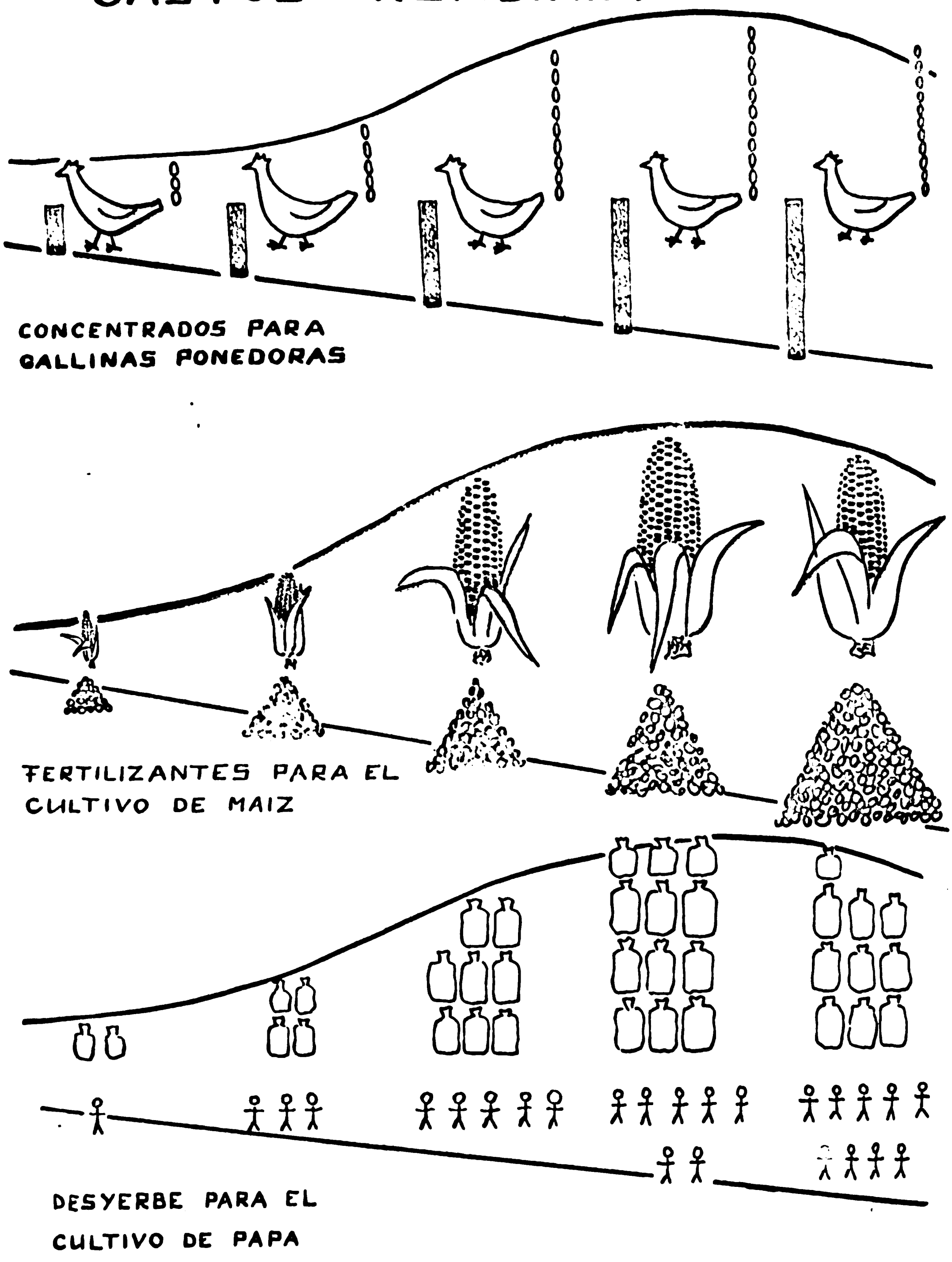


MARGENES DE COMERCIALIZACION



RELACION

GASTOS : RENDIMIENTOS



or blue, whereas the axes of the graph may be black. The whole graph or picture should not have a perfect artistic image, but more the character of working material, and the student should believe that the graph or picture was quite rapidly designed and drawn.

B. Slides

This is an excellent visual aid to explain the more practical and applicated aspects of marketing. Within this field, especially for marketing, functions and different types of markets, slides are very instructive. Being the market analysis more theoretical, the slides have less use for that matter. Some aspects which can be well explained by slides are e.g. grading, storage, transport, packing and processing of agricultural products, views of wholesale and retail markets, etc.

The slides should have the respective aspect in the fore-ground. In order to show aspects of grading or packing, some close-up pictures may be preferred. In the case of alides products, different grades of maturity, sizes, physical or biological damages, can be well expressed. If it is possible, the picture should not show only the product, building or equipment, but also the people working with them. Each slide should have at least two or three well differenciated colors. It does not seem very useful if graphs, tables or pictures from books are reproduced by slides. If one uses slides for teaching, it is necessary to have a certain number of slides for each specific aspect, product or product group to explain differences, changes, marketing channels, etc. A guide for a small collection of slides for marketing of each product group might be

as follows:

Transportation problems (2/26, 2/22)	3
Grading (2/8, 2/2)	4
Packing material (2/7, 2/17)	3
Storage facilities (2/27, 2/24, 2/14)	3
Processing facilities (2/19, 2/18)	2
Processed products and raw materials	1
Wholesale markets (2/7)	2
Retail markets (2/25, 2/23)	4
Assembly markets (2/21, 2/17)	1
Autions (2/12, 2/9)	1
Cooperatives (2/1)	1
Total	25

If the following group of products: grains, starchy roots, fruits and vegetables, livestock products and fish, fats and oils, condiments, fibers, and forestry products, would be considered, a collection of about 200 slides would be the minimum required. The above mentioned list would be somewhat different composed for livestock products and forestry.

C. Illustration with products or samples

This type of visual aids is very useful, for aspects like grading and packing. Fresh or prepared products may be hanged up on a wooden board. On a white carton below the products, the necessary explana - tions can be given. When teaching fruit and vegetable marketing, the first illustration could be a collection of different products, the second one, a collection of different species of the same product and the third one, a sample of aspects to be considered with grading, like maturity grades, different sizes, damages, etc. It is advisable that the products can be easily taken off from the board, in order to explain special characteristics with the fruit in hand. It gives a good image, if the products are hanged up in a certain symmetrical order, as curves, circles or straight lines. For grains, the board can be used permanently, if the product is well dried and prepared. However, the visibility of these grain samples on a board is limited to a distance of 1 1/2 to 4 meters. In this case it would be better to advise students to have a close-up look at the board after finishing the class. The use of slides could be also more efficient in this case.

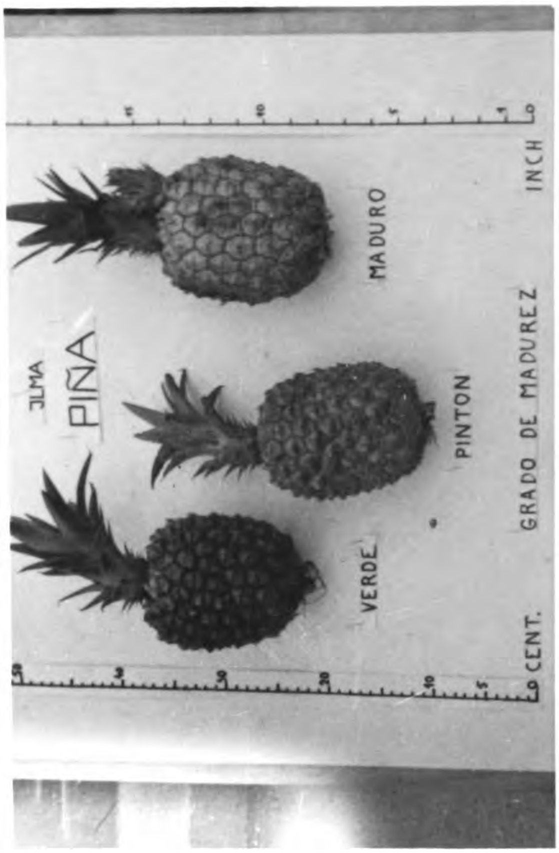
D. Blackboard Maps

On a blackboard are drawn the contours of a country or region with red non-effaceable color. On one side of the blackboard, there might be one map of South America and another one of Central America, on the other side, a world map could appear; or there might be a map of an

individual country or department too. In these maps can be included some fixed orientation points or lines, as borders, rivers, capital cities, etc. The maps are very useful for teaching international trade. With a crayon, it can be indicated, exporting and importing countries for a certain product, and wipe it off if another product is discussed. At the left or the right side of the blackboard should remain a small free space to write explanations. If these maps are from individual countries, they could be used for regional planning, indicating with different colors the production zones, highway network, location of marketing facilities, etc.

E. Figures and Symbols for Inmediate Use

There are a number of simple and common figures which can be always used if a problem is explained on the blackboard. For the drawing, a certain skill is needed, however with some practice, this can be learned. In many cases, the most simple drawing is a graph with some curves, especially if a market analysis is treated. To explain marketing functions or organizations, one may draw a man, a ware-house, a truck or products, as it is shown on the next pages. It is best , if two or three (not more !) different colors are used, especially if a graph includes more than one curve. It is not necessary that the drawings be very artistic, but the sizes and scales should be in order. Also in this case, it is not necessary to give the aspect its natural color; the use of colors is more to distinguish groups, levels, steps, etc.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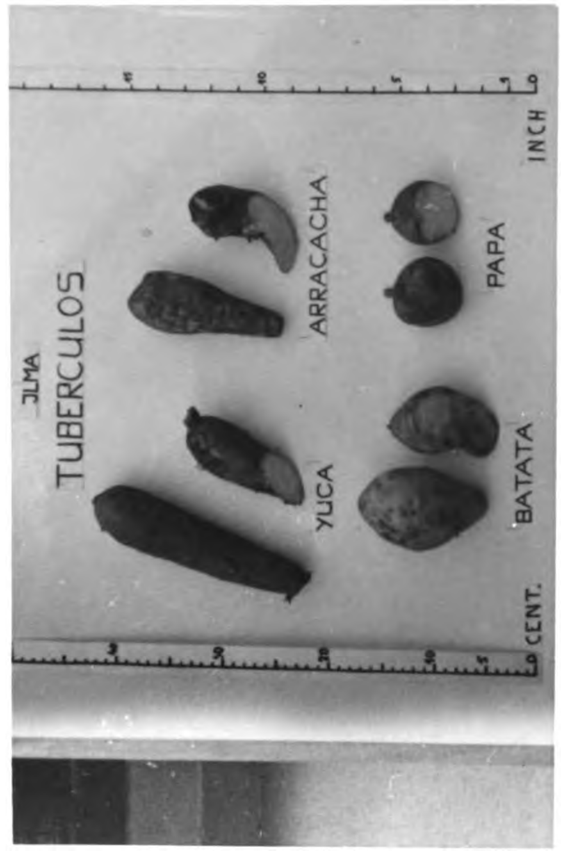
PINTON
MADURO
GRADO DE MADUREZ
CENT.
INCH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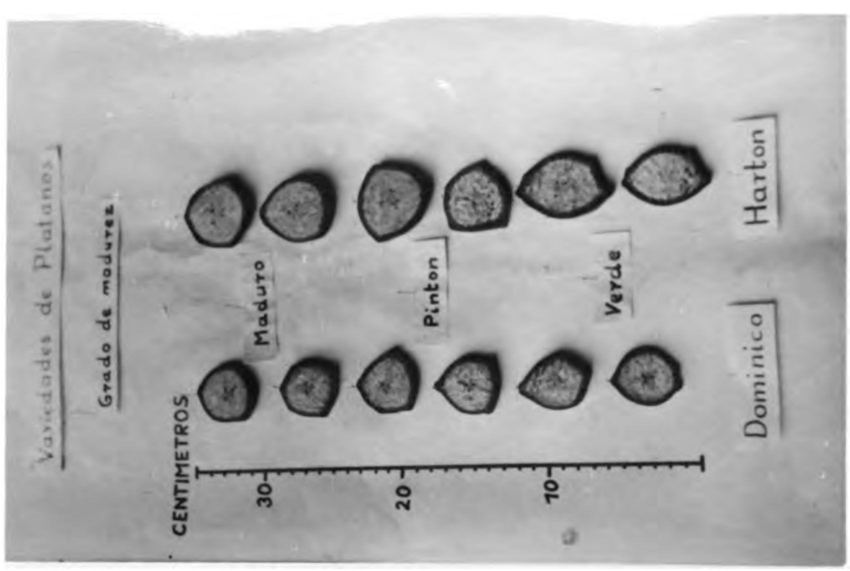
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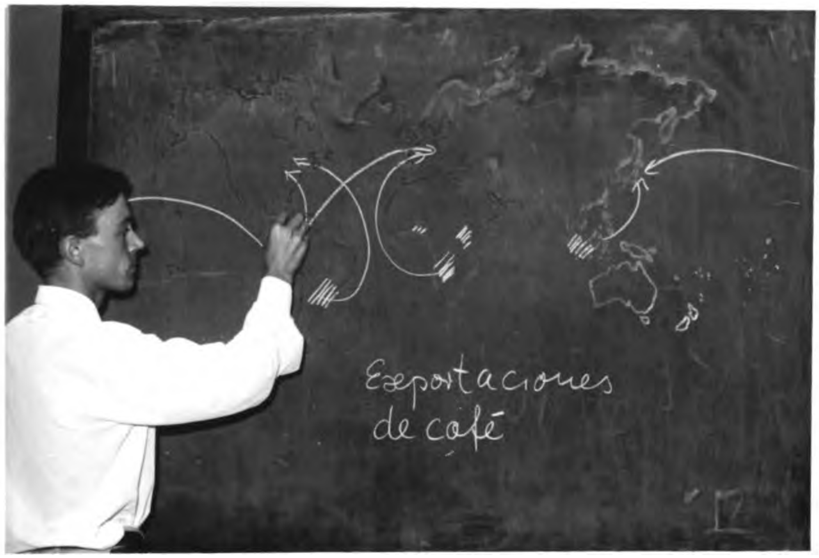
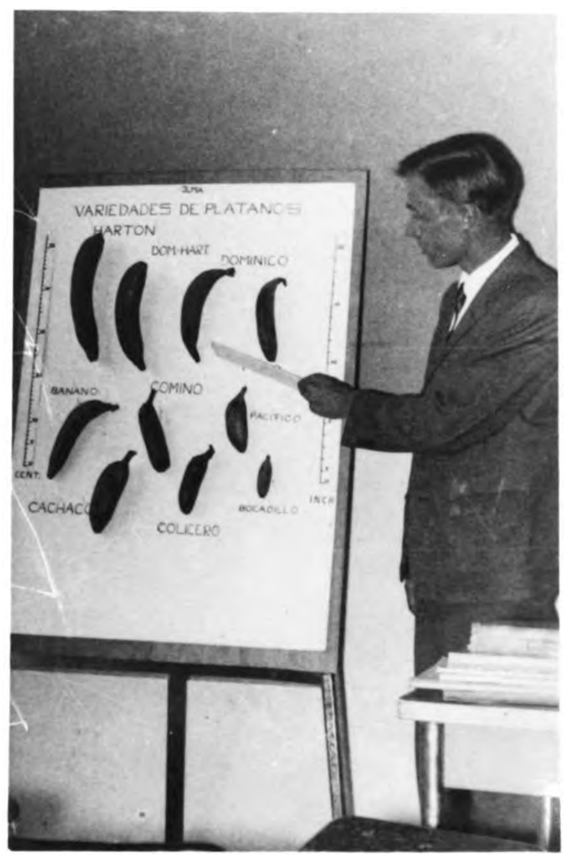
Grado de madurez
Maduro
Pinton
Verde
Harton
Dominico
CENTIMETROS
30
20
10


Exportaciones
de café

270
256
183
440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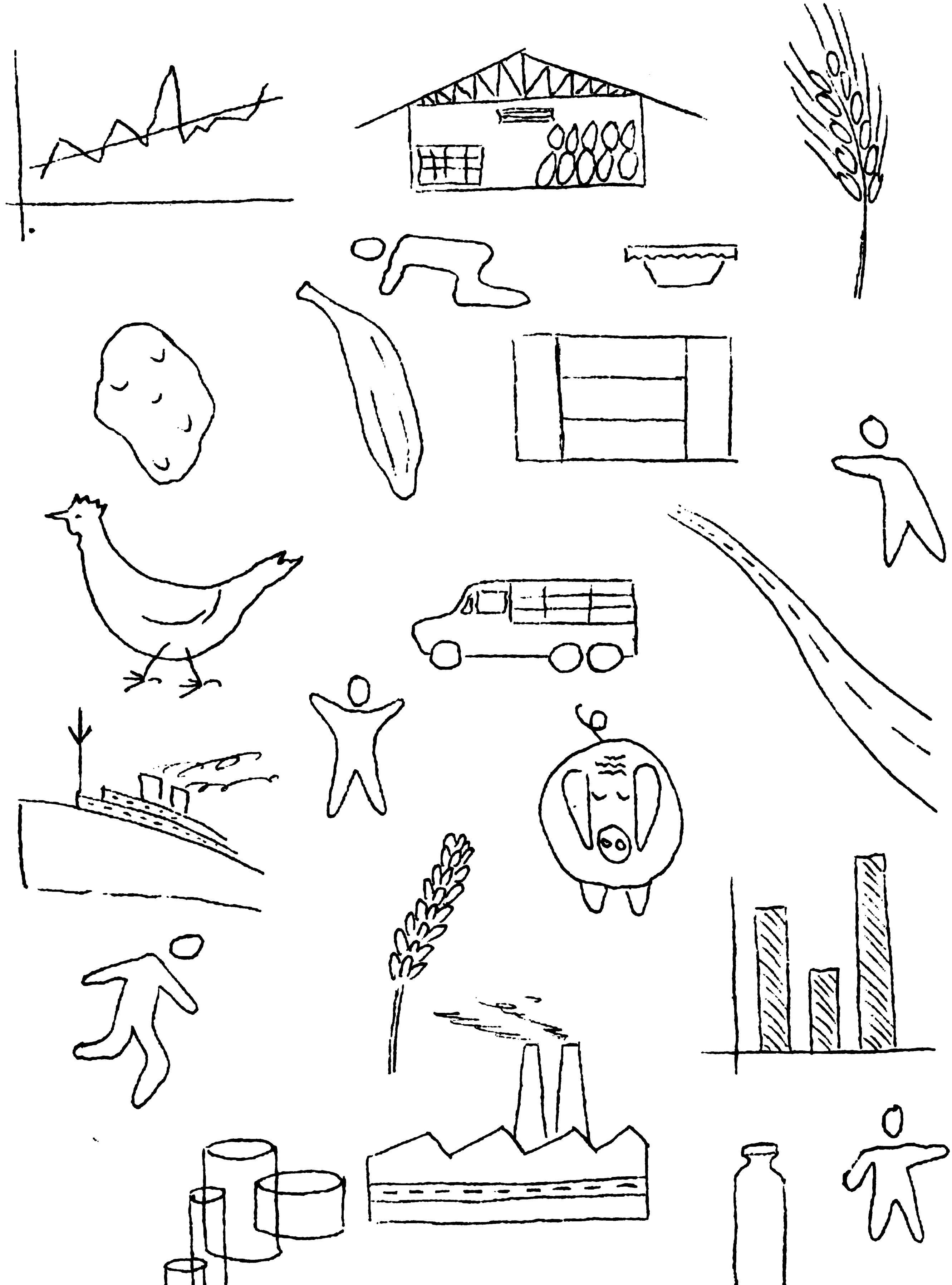
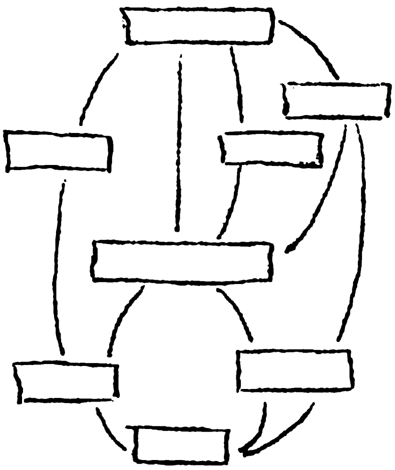
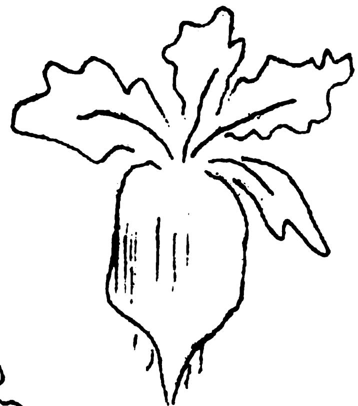
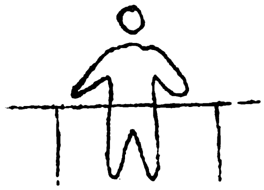
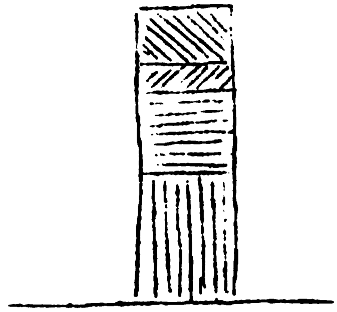
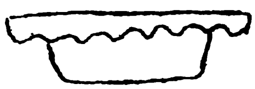
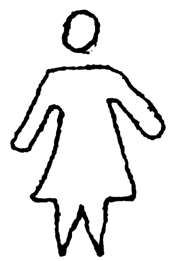
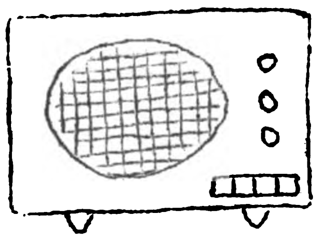
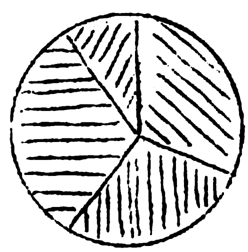
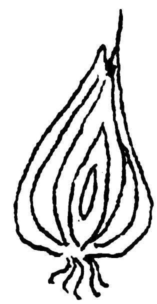
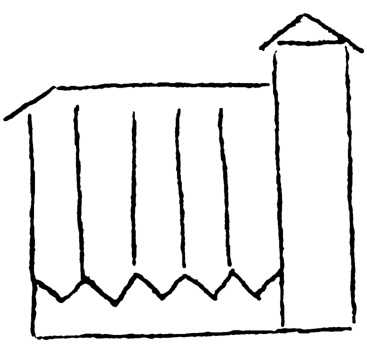
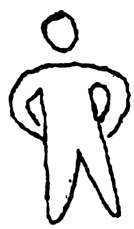
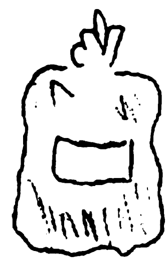
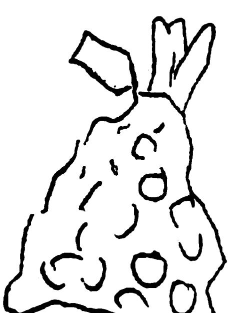
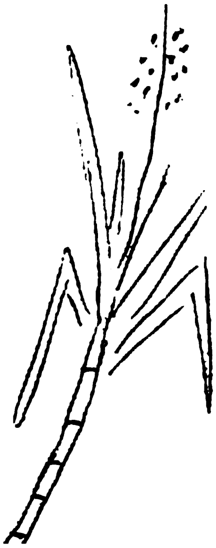
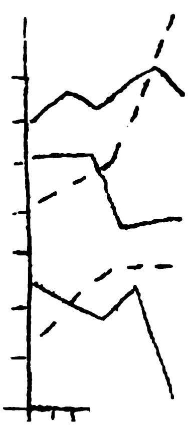
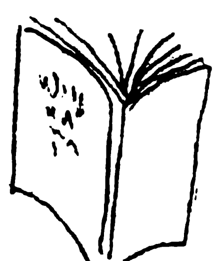
PACIFICO
CENT.
COLICERO
BOCADILLO



III. How to use Visual Aids

One may have an excellent collection of graphs, slides, etc., however, the objective of this teaching material will only reach if he knows some technical aspects and how to use it. The most important point is that this teaching material should not disarrange the normal flow of the class. Moving a heavy blackboard, closing and opening the curtains, hanging up a graph with drawing-pins (which might not enter into the wall) produce much noise which can divert the students considerably. Beside this, there is a time-lost, if one needs e.g. five minutes to find the electrical connection for the slide projector and thereafter he discovers that the projector lamp was already damaged. For that reason, it does not seem very appropriate if single slides are used during the discussion of the subject matter. It is more reasonable to project a collection of slides at the end of the respective subject matter, may be in the last quarter of the hour. A serie of 15 to 20 slides constitute an interesting part of the class. One half, to one and a half minutes for each slide would be a reasonable time. If one has less than 8 to 10 slides, it is better to wait for the next subject matter and to join them with others. In order to integrate well the use of graphs in the matter teached, they could be hanged up on a frame, where only the papers are moved, without producing noice or technical troubles.

The use of visual aids needs a careful preparation of the material before class; and during the class, no technical problems should appear.

Programming of classes				Code
Course: General Marketing	Prof.: R. Garcés	Students: Post-Grad.	Date: 11.6.68	SMM-16
Hour: 8-10	Place: IICA-CEI	General objective: Economics of Storage		

Repetition	Questions	Verbal explanations		Visual aids			
		Theory	Examples	Data	Calculation	Drawings, graphs etc. at the blackboard	Teaching material
Grading		Objectives of storage					
			grains fruits cheese wine				G 16
		storage facilities	silos refrigerator, elevat.			Ware-house with components	G 28
	Cost items	Cost calculation					
		fixed and variable cost	ware-house	3 mill. val. 3 perm. work. 500 tons capacity	Depreciat. capital interest		
		Break-even					G 35
		Price estabilization by storage					D 89-109

Observations: There were 23 students; special interest for storage of potatoes and about cost calculation.

It is also necessary to plan at which points of the discussion, the teaching material will be used. The main objectives of the visual aids are the following:

1. To give the students an idea of space and time
2. To indicate the flow of a complete process
3. To attract students for special problems
4. To give a rapid understanding of comparable numbers, sizes, volumes, etc.
5. To explain the practical importance of theoretical problems.

The use of teaching material requires a certain movement of the teacher or professor. However, he should have always a fixed place on a desk or table. No excess of teaching material should be used, but a good combination of verbal explanations and visual aids is necessary. The speech permits a high concentration, however, it is often too abstract, and if students can not follow the context of the problem, concentration will decrease. This happens especially if there is a long time-gap between two complex problems. The visual aids are an excellent mean to give the class more dynamics and more reality.

IV. EFFICIENCY MEASUREMENTS

In order to obtain an idea of what kind of visual aids is more appropriated for a certain type of student, one should undertake from time to time an evaluation. The efficiency of a graph or slide can be tested by very short questionnaires. The author of the teaching material has a fixed idea of the objective and the students might be asked on their individual opinion of it. If the interpretation of the students will almost be the same as of the author, this would indicate a good effect. The questions about the respective teaching material should be concerned to the following three aspects:

1. Size of graph,of the writing and of the drawings or symbols
2. Kind of symbols or drawings used
3. Use of colors

The questionnaire on page No. 22, may give an idea of such an experiment. The author of this report realized some samples among students of different universities about their opinions on a couple of graphs (1/2-35-1-36-20- 23). The experiments were realized in the University "Jorge Tadeo Lozano" in Bogotá, Colombia, in the Latin American Marketing Institute (ILMA), Bogotá, Colombia and in the Inter-American Institute of Agricultural Sciences of the O.A.S. (IICA) in Turrialba, Costa Rica, covering a total of 62 students.

QUESTIONNAIRE ABOUT THE EFFECT OF VISUAL AIDS FOR TEACHING AGRICULTURAL MARKETING

1. Could you express the meaning of the following chart with one or two sentences? ______________________________

   ____

   ____

2. Have you recognized the meaning of the chart:

   a. Inmediately

   b. With time

   c. In part only

   d. Not well

3. Did you like the color combination? Yes ( ) No ( ). If "no", which other colors would you prefer? ______________________________

   ____

4. Did you like the symbols or drawings used? Yes ( ) No ( ). If "no", which other symbols or drawings would your propose? __________

   ____

5. Had you difficulties to read explanations?

   Yes ( ) In part ( ) No ( )

6. Could you recognize well the symbols or drawings?

   Yes ( ) In part ( ) No ( )

7. At what distance you are approximately from the chart? ______ meters.

All students had already passed the respective subject matter, but they had never seen before the chart. For each graph they had three minutes to fill out one questionnaire. The title of the chart was not shown. The average distance of the students from the blackboard was 4 1/2 meters. The description of the charts included in the sample, is as follows:

<u>No. 1</u> (1/2)

Size: 80 x 110 centimeters

Title: Law of diminishing yields

Altitude of letters: 3 centimeters

Symbols or drawings: Curves, hens, feed concentrates, corn spikes, fertilizers, potatoe bags and men.

Colors: red, green, blue

<u>No.2</u> (1/35)

Size: 60 x 90 centimeters

Title: Macroeconomic model of creating capital resources

Altitude of letters: 2 1/2 centimeters

Symbols or drawings: Squares, circles and some numbers

Colors: green, yellow, blue

<u>No. 3</u> (1/1)

Size: 80 x 110 centimeters

Title: General illustration on processing agricultural products

Altitude of letters: 2 1/2 centimeters

Symbols or drawings: Crude and processed agricultural products, processing plant.

Colors: Red and blue

<u>No. 4</u> (1/36)

Size: 80 x 110 centimeters

Title: Levels of competition

Altitude of letters: 2 1/2 centimeters

Symbols or drawings: squares and circles

Colors: Yellow and brown

<u>No. 5</u> (1/20)

Size: 80 x 110 centimeters

Title: Income-demand relation for banana in the world market

Altitude of letters: 2 centimeters

Symbols or drawings: Curve

Colors: Black and red

<u>No. 6</u> (1/23)

Size: 60 x 90 centimeters

Title: Grading of agricultural products

Altitude of letters: 2 1/2 centimeters

Symbols or drawings: Different agricultural products with different sizes, damages, maturity grades, etc.

Colors: Yellow, red, brown, green, blue, black

The evaluation of the questionnaire gave the following results:

Item	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	Average
Interpretation							
Exact	50	0	50	70	73	83	54
Good	12	25	27	15	8	11	16
Fair	38	60	17	25	19	6	28
Bad	0	15	6	0	0	0	2
Total	100	100	100	100	100	100	100
Recognition							
Inmediate	36	25	50	18	15	88	39
With time	64	40	50	63	80	7	51
In part only	0	23	0	18	5	5	9
Nothing	0	12	0	1	0	0	1
Total	100	100	100	100	100	100	100
Colors							
Accepted	75	63	76	53	100	45	69
Not accepted	25	37	24	47	0	55	31
Total	100	100	100	100	100	100	100
Symbols, drawings							
Accepted	90	50	88	61	93	100	80
Not accepted	10	50	12	39	7	0	20
Total	100	100	100	100	100	100	100
Letters							
Clear	75	67	100	83	68	93	81
Not clear	25	33	0	17	32	7	19
Total	100	100	100	100	100	100	100

The results are rather good for the graphs No. 1, No. 4, and No. 6. This is mainly due to the symbols or drawings choosen. Graph No. 2 had a bad result, due to the very abstract drawing and a bad color combination. The colors yellow-brown were not very well accepted, whereas blue-red and

red-black were good received. The great color mixture of graph No. 6 gave no good image. With exception of graph No. 2, all other symbols were well recognized. With respect to the letters, it seems that 2 centimeters is already the minimum altitude required.

V. CATALOGUE OF VISUAL AIDS

If there is available, a considerable number of graphs, slides, etc., one should establish a catalogue in order to find rapidly the teaching material for the respective subject matter. The material to be stored will be enumerated continuously and the respective number will appear in the catalogue. The latter should be subdivided in two parts: Subject matters and products or product groups. For international trade and marketing in different countries, a third part, concerning "regions" can be included. The subjects depend much on the emphasize given in the respective course. However, it would be advisable to have two groups: marketing and market analysis. If it is needed, there might be a first part, related to general economics and a last part about international trade. The following outline might be a guide for establishing different groups within the catalogue of visual aids for agricultural marketing.

I. SUBJECT MATTERS

A. General Economics

1. Macroeconomics
2. Production economics

B. Marketing

1. General
2. Marketing facilities
   a. Transport
   b. Grading
   c. Processing
   d. Storage
   e. Packing
3. Marketing organization
   a. Wholesale
   b. Retail
   c. Assembly
   d. Others
4. Marketing services
5. Government's marketing policy
6. Marketing channels and margins
7. Feasability and efficiency

C. Market Analysis

1. General
2. Supply
3. Demand
4. Prices
5. Projections

D. International trade

1. General
2. Export-import

3. Trade and monetary policy
4. Commodity agreements
5. Regional integration

II. PRODUCTS

A. Grains
B. Starchy roots
C. Fruits and vegetables
D. Condiments
E. Oils and fats
F. Livestock products and fish
G. Fibers
H. Forestry products
I. Others

III. REGIONS

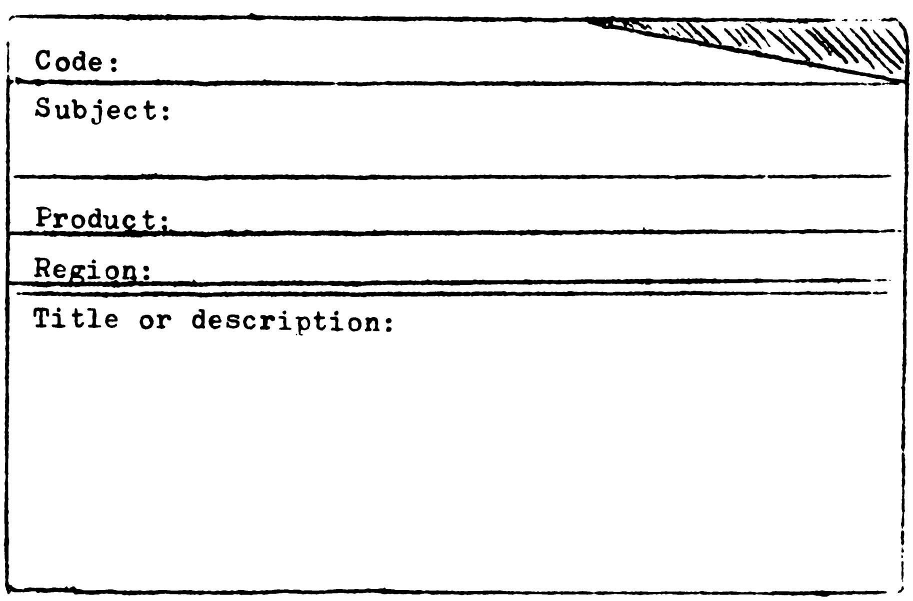
A. Brazil
B. Colombia
C. Costa Rica
D. France
E. United States
F. Others

The white catalogue cards may have a size of 7 x 12 centimeters. To separate subject matter or products, somewhat higher, yellow cards can be used. In the first line of the white card should appear the code number of the respective teaching material. This number is divided in two parts; the first indicates the kind of teaching material, the second one the sequence order in the store:

No. 1 - 43	Wall chart No. 43
No. 2 - 16	Slide No. 16
No. 3 - 29	Film No. 29
No. 4 - 08	Sample No. 08

It is advisable to put on the right up corner a certain color in order to recognize inmediately the type of teaching material. In the second line of the card, should appear the subject matter, in the third one the product and in the fourth one the region or country. If it is a general graph (or slide, etc.), the product or region may be characterized by "n.s" (not specified). After a bigger line, follows the title or a short description of the respective teaching material; in the case of time-series, it is advisable to mention also the period covered.

With the described organization, the catalogue is very useful for finding rapidly the necessary teaching material and for completing from time to time the material required. These facts are important for a complete success of using visual aids for teaching agricultural marketing.



VI. SUMMARY

The visual aids discussed in this report are: charts, slides, samples of products and blackboard maps.

The aspects to be considered in preparing visual aids are: size of the material, size of letters for explanations, symbols or drawings used, color combination, and about all the problem treated.

The charts are appropriated for theoretical aspects, whereas the slides could demonstrate the practical side of a problem discussed. The product illustrations have special utility for teaching, grading and packing, whereas the blackboard maps are used for international trade and planning of agricultural marketing.

A reasonable collection of visual aids for teaching agricultural marketing would be about 60 charts, 200 slides, one large blackboard with three maps and 4 to 8 product samples. Also, the professor should have in memory a certain number of symbols for inmediate blackboard use and it would be an advantage to be skilled in drawing.

The use of visual aids for teaching should be well planned and always combined with an oral explanation of the problem. It is not advisable to include single slides during the class, but to show a collection of at least 10 slides, after discussion of a determined subject matter. The use of visual aids should not interrupt the normal flow of teaching; any noice, movement of equipment or loss of time should be avoided.

The symbols used should be easy to recognize. No artistic perfection is necessary, but the scale of the figure must be in order.

If more than three colors are used, the individuality of each aspect is too large. The most appropriate color combinations have been: red-blue-black and yellow-green-black. There is no need to use an item's natural color, but different colors can be used to distinguish product groups, levels, steps, etc.

To obtain a good teaching material, an evaluation of the effect produced is required. Through questionnaires, the students might be asked for their interpretation of a graph, slide, etc. The answer will be compared with the former idea of the author of the material. Students can be asked also if they like the colors, the symbols or drawings, the kind of letters, etc.

If there is enough teaching material available, a catalogue should be established. It will include a part on subject matters, on products (or product groups) and on regions. The code number of each card must indicate which kind of visual aid it is, e.g. slides, films, charts, etc.

KW:yvl
29-8-69
DR;370